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Family and consumer sciences life skills: attainment by secondary school students

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Family and consumer sciences life skills:
Attainment by secondary school students

by

Robin Trimble White

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Family and Consumer Sciences Education

Major Professor: Judy K. Brun

Iowa State University

Ames, Iowa

1997

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For ~~the~~ Major Program

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DEDICATION

This dissertation is dedicated to my husband, Dennis, who faithfully traveled every step of this journey with me. He is an endless source of encouragement and blessing to me. His humor, insight, and reassuring presence kept events in perspective and made this trip worthwhile. Everyone should be so lucky to have such a supportive and loving person in their life.

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x

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In all thy ways acknowledge Him, and He shall direct thy paths. Proverbs 3:6

ABSTRACT

This study evaluated the effectiveness of Iowa's secondary school family and consumer sciences programs as perceived by students. A two-stage stratified random sampling procedure resulted in usable data from 273 graduating seniors from 98 schools during the 1995-96 school year. The sample was comprised of 135 students (53% males, 47% females) with one semester or less of family and consumer sciences education and 138 students (34% males, 66% females) with three or more semesters of instruction. Students' perceived level of competence was measured in the areas of housing and home management; food and nutrition; individual and family health; personal and family living; consumer education and resource management; textiles and clothing; child development and parenting; and leadership, job getting and job keeping, and entrepreneurship.

A significant difference ($p < .01$) in the total mean scores between groups was found. Students with three or more semesters of family and consumer sciences education reported a higher level of self-perceived competence than did students with one semester or less of instruction. When the family and consumer sciences competencies were studied individually, mean levels of reported competence for 36 of the 38 competencies

were higher for those students in the three-semester-or-more group than for those in the one-semester-or-less group. Significant differences ($p < .001$) were found for 16 of the 38 competencies assessed and for six of the eight content areas evaluated.

Significant differences in gender and academic rank were found between groups in the sample. Students who had three semesters or more of instruction ranked lower academically, worked longer hours, lived in families with lower incomes, and joined FHA or HERO more often than did their peers with less instruction. Two variables—the number of semesters of instruction students had and the number of sources of information students used—accounted for only 11% of the variance found in students' scores.

Quantitative data from this study document the effectiveness of family and consumer sciences programs in Iowa as perceived by students.

CHAPTER 1: INTRODUCTION

Change today is more rapid, more complex, more turbulent and more unpredictable than in the past (Land & Jarman, 1992). The dramatic social, political, economic, and cultural shifts occurring in our country are unprecedented and directly affect the status of individuals and families in our society. The well-being of America's families is threatened and the crisis is well documented (National Commission on Children, 1991; Frazier, 1993; Iowa Kids Count, 1993, 1995):

- Family structures have changed. The "traditional" American family of homemaker mother, breadwinner father, and children is now in the minority.
- Many women and men in the workforce are struggling to balance work and family roles.
- Rates of crime, child abuse, domestic violence, teen pregnancy, and school drop-outs are increasing.
- One in four adolescents in the U. S. engages in high-risk behaviors.
- One in twelve babies in Iowa is born to an unmarried teen.
- From 1982 to 1992, the number and the rate of founded cases of child abuse more than doubled in Iowa.
- Rural counties in Iowa had teen violent death rates in 1992 that were higher than the overall state rate.
- Trend data from 1980-1995 indicate that adolescent parenting and child abuse and neglect rates have increased while teen violent deaths have remained about the same.

Societal Implications

Statistics such as these have direct implications for our ability to achieve our potential as a nation. Nussbaum (1988) provides evidence that the driving force behind economic development is people. Snyder (1987) asserts that families are the largest and most productive force in our free-enterprise system. If we are to strengthen our country, we must begin with our families. The family is the primary source for the improvement of persons as individuals, of the human condition in general, and of specific conditions in society needed to support the well-being of families (Brown, 1980). Families are the key to human resource development and, consequently, a means to economic development.

Individuals and families must be empowered through education to maximize their human resources and lessen their need for social services. The competencies needed today to balance the demands of work and family life "are increasingly cognitive and complex and are not likely to be learned in the contemporary home and family setting without some [educational] intervention" (Home Economics Education Association, 1991, p. 5). According to economist Kenneth Boulding (1972), the lack of skill of the household decision-maker is one of the greatest weaknesses in our social structure. "In a traditional household, we learn these skills

from a grandmother. Today, from whom do we learn them? Very often, from nobody" (p. 119). Because skills are no longer passed down from one generation to the next, Boulding recommends a high priority be placed on household education. Family and consumer sciences programs in secondary public schools provide that kind of education.

In rural communities, families look to the public school as the vehicle for community survival and development (Ross, 1988). As often the most important public institution in the rural community, schools must assume an active role in developing the competencies of family members. As the only discipline in the public school with the family as its focus, family and consumer sciences is accountable for delivering instruction which helps individuals develop the knowledge and skills they need to function effectively in meeting the demands of daily living (Deacon, 1989). According to the Home Economics Education Association (1991), competencies essential for optimum quality of life include:

- (a) providing for personal and family development at the various stages of the life cycle and for establishing satisfying personal and family relationships, (b) caring for and nurturing children, (c) providing and caring for personal and family clothing, (d) managing financial and

other resources, (e) providing nutritious foods for self and family members, and (f) selecting and maintaining housing and living environments for self and others. (p. 4)

This study assessed the delivery of these essential life competencies in Iowa. Data from this research contributed one measure of the worth of Iowa's secondary school family and consumer sciences programs and helped identify program strengths and areas for improvement. Through this information, family and consumer sciences programs can be strengthened, and students can become more fully-functioning family members as well as more productive members of society. Results also contributed Iowa data that may be used in meeting the federal mandate for vocational education program assessment legislated by the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990. In addition, data from this study may be used by the Iowa Department of Education in its evaluation and revalidation of the minimum program competencies required for secondary school family and consumer sciences programs in Iowa.

National Accountability Demands

Requirements for accountability have increased for educational programs that receive federal funds. To meet

these demands to document the effectiveness of programs and to ensure responsible use of federal dollars, increased numbers of formal evaluations have been requested. This has been especially true since the passage of the Elementary and Secondary Education Act of 1965 (Public Law 89-10).

Evaluation of federally-funded family and consumer sciences¹ education programs in the nation's public secondary schools was first mandated in the Education Amendments of 1976 (Public Law 94-482) and continues today under the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 (Public Law 101-392). It is the role of states to allocate federal funds in such ways that programs outlined by the legislation are implemented.

As defined by Worthen and Sanders (1987), evaluation is "the act of rendering judgments to determine value-worth and merit-..." (p. 24). Although more than 50 models exist for designing formal, systematic evaluations, by 1980, 15 years after passage of the Elementary and Secondary Education Act, few summative evaluations of comprehensive secondary school

¹At a landmark meeting, Positioning the Profession for the 21st Century, held in Scottsdale, AZ on September 21-23, 1993, representatives from five professional organizations (the American Home Economics Association, the Association of Administrators of Home Economics, the American Vocational Association, the National Association of Extension Home Economists, and the National Council of Administrators of Home Economics) recommended that the name of the home economics profession be changed to family and consumer sciences. Subsequently, many home economics related organizations and education programs have adopted use of the family and consumer sciences terminology. Although this dissertation reviews research conducted as consumer and homemaking education and home economics education, the new family and consumer sciences terminology will be used to reflect current professional practice.

family and consumer sciences education programs had yet been conducted. Spurred by specific language in the Education Amendments of 1976 (Public Law 94-482) calling for "a review and evaluation of the effectiveness" (p. 160) of family and consumer sciences programs, Griggs and McFadden (1980) conducted a national study of evaluations related to such programs for the National Institute of Education. They found "very little research that speaks to the effectiveness" (p. 16) of family and consumer sciences programs. The lack of specifically defined evaluation criteria, use of less-than-rigorous evaluation methodologies, and failure to publish results of evaluations for broad access further limited the usefulness of many of the studies that had been conducted (Rossman, 1983).

In her review of the literature ten years later, Van Buren (1992a) found that research related to students' perceptions of the effectiveness of family and consumer sciences secondary education programs "is limited, generally small scale, encompasses short time periods, and lacks base data for comparisons" (p. 16). Further, most evaluations of family and consumer sciences programs have been implemented at state and local levels rather than nationally and have tended to focus on specific content areas rather than the total family and consumer sciences program of a school from an

integrated perspective (Crawford, 1980; Crew, 1990). This means that most have looked at changes in students' knowledge, attitudes, and behaviors in only one content area in any one study: foods and nutrition, individual and family health, consumerism, family living and parenthood, child development and guidance, housing, home and resource management, or clothing and textiles. Another concern is that the number of effectiveness studies of secondary school family and consumer sciences education programs reported in the literature continued to be small a decade after the 1980 work by Griggs and McFadden (Clawson & Pestle, 1990; Gritzmacher et al., 1990; Winsor, Cote, & Griswold, 1990; Wendland, 1990; Worley, 1990; Wendland & Schultz, 1991; Wendland & Torrie, 1991a, 1991b, 1991c; Caputo & Trenbeath, 1991; Couch, Felstehausen, & Robinson, 1991; Lundsford & Clawson, 1991; Pestle & Baum, 1991; Preston, 1991; Van Buren, 1991; Couch & Felstehausen, 1992; Horng, 1992; Jenkins-Vulgamore & Laster, 1992; Kokinda & Levine, 1992; Van Buren, 1992a, 1992b; Fox & Van Buren, 1994, 1995; Lee, 1996).

Iowa Implications

The 1989 Session of the 73rd General Assembly of the Iowa State Legislature passed the Family, Consumer, and Career Education Act (State of Iowa, 1989 Acts and Joint Resolutions,

Chapter 278, S.F. 449) mandating that new provisions for vocational education be enacted by July 1, 1992 in Iowa. A critical component of the legislation was a requirement that minimum program competencies for attainment by students be established. Some educational theorists might have called these competency statements program goals, learner outcomes, or instructional objectives.

Experts from each of six listed vocational education service areas, including family and consumer sciences, were to prepare such a competency list. Statewide technical committees composed of representatives from businesses, industries and organized labor were charged with identifying the minimum skills, knowledge, and attitudes needed by an individual to successfully enter, maintain, and advance in jobs and careers in a cluster of occupations. Family and consumer sciences, with its focus on living skills related to managing family, consumer, and career demands, was defined as one of six occupational clusters in what was at the time still called home economics education. The other five clusters related to occupational programs in family and consumer sciences-related areas such as child day care and food service. After the technical committee for family and consumer sciences completed its work, competencies were printed and distributed to all Iowa family and consumer

sciences teachers. The documents were transmitted to high school principals through correspondence from the Iowa Department of Education (1991).

A strategy to be used in the process of establishing minimum program competencies and outlined by the Iowa Department of Education included the revalidation of the minimum program competencies at least every three years, with 1992-93 established as the base year. The 1995-96 school year marked the due date for the first round of competency revalidation. In addition, one element of the Department of Education's required annual evaluation of at least 20% of approved vocational education programs in the state is to ensure that programs are "enabling students enrolled to perform the minimum competencies independently" (Iowa Department of Education, 1994, Appendix B, p.9). The results of the research reported here provide data which can be used by the Department of Education in the revalidation of the family and consumer sciences minimum program competencies of 1991 and the determination of effectiveness of selected family and consumer sciences programs.

Research Objectives

The research to be reported in this dissertation evaluates the effectiveness of Iowa's secondary school family

and consumer sciences programs in delivering education that is to lead to the attainment of the mandated minimum program competencies as perceived by students. Specifically, students' perceptions of their abilities to perform the minimum program competencies for family and consumer sciences education were studied. In a companion study in progress (M. A. Good, personal correspondence, March 24, 1997), another researcher surveys the teachers of these students, asking their perceptions of the importance of the competencies to their program and the extent to which they teach the minimum program competencies.

In this study, to be better able to attribute competence to the educational program, the self-perceived level of competence of family and consumer sciences students who were graduating seniors and had three or more semesters of family and consumer sciences education was contrasted with the self-perceived level of competence of students at the same level who had one semester or less of family and consumer sciences instruction. It was hypothesized that students who had more family and consumer sciences education would perceive higher competence than those students who had little or no family and consumer sciences education.

Additional objectives of the study were to:

1. describe and compare the personal and demographic characteristics—gender, ethnic origin, size of graduating class, academic rank, marital status, number of children, household income, employment status, family structure, membership in organizations, kind and amount of family and consumer sciences instruction, and preferred sources of information—of students in each of the two groups

2. determine the effect of students' personal and demographic characteristics on competency attainment

3. identify students' reasons for enrolling or not enrolling in family and consumer sciences courses

4. based on the research findings, identify strengths of family and consumer sciences programs in Iowa and make recommendations for the revalidation of minimum program competencies.

Funding Sources

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CHAPTER 2: REVIEW OF LITERATURE

In this research, data were gathered on graduating seniors' perceptions of their abilities to perform the minimum competencies expected to be taught in family and consumer sciences education in Iowa's public and private secondary schools. To be better able to attribute student competence to the educational program, the self-perceived level of competence of students who had three or more semesters of family and consumer sciences education was contrasted with the self-perceived level of competence of students who had one semester or less of family and consumer sciences instruction.

The published knowledge base documenting the effectiveness of secondary school family and consumer sciences programs is limited. An exhaustive search of the literature revealed a paucity of reported evaluation studies. Two methods were used to search the literature. A computer search was conducted using various descriptors related to family and consumer sciences and a manual review was also conducted of the 1990-1996 tables of content of the *Journal of Family and Consumer Sciences*, *Family and Consumer Sciences Research Journal*, *Journal of Family and Consumer Sciences Education*, *Forum*, *Themis*, *Journal of Vocational Education Research*, and *Journal of Vocational and Technical Education*. Published

abstracts from the 1990 through 1996 annual meetings of the American Association of Family and Consumer Sciences and the Family and Consumer Sciences Division of the American Vocational Association were also manually reviewed.

Much of the information regarding the results of studies that have been conducted has been presented as refereed research papers at professional meetings; printed information is limited to published abstracts of these research proceedings. Another avenue for receiving information about secondary school program effectiveness is through the communication network of family and consumer sciences state administrators and university teacher educators. Program documents or reports related to accountability published by state departments of education are often shared informally among these administrators at national meetings and by mail.

Few evaluation studies reported at professional meetings or shared by state administrators have appeared in the referred research journals of the field. This is indeed unfortunate. As Hawthorne, Woodburn, and Powell (1984) remind us, "Research is the foundation and lifeblood of any profession" (p. 491). The American Psychological Association (1994) declares:

Research is complete only when the results are shared with the scientific community. Although sharing

is accomplished in various ways, both formal and informal, the traditional medium for communicating research results is the scientific journal.

The scientific journal is the repository of the accumulated knowledge of a field. In the literature are distilled the successes and failures, the information, and the perspectives contributed by many investigators over many years. (p. 1)

Crawford (1980) reviewed the literature regarding program evaluations for family and consumer sciences education up through 1979 and Crew (1990) extended this review of literature for the period 1980 through 1989. Therefore, the review of literature presented here extends those two reviews by encompassing research reported from 1990 through 1996. The exception is that this review also includes a historical summary of three national family and consumer sciences evaluation initiatives that provides perspective for the purposes of the research reported in this document.

National Evaluation Initiatives

The Education Amendments of 1976 specifically mandated the evaluation of family and consumer sciences programs. The legislation charged the National Institute of Education (NIE)

with investigating the extent to which programs were responsive in delivering subject matter and targeting student groups outlined in the law and whether programs had an impact on learners (NIE, 1981). Three national evaluation initiatives resulted (Griggs & McFadden, 1980; Hughes, Rougvie, & Woods, 1980; Drew, Jones, & Siegel, 1981). Stimulated by the legislative mandate, evaluation activities at state and local levels also increased.

Griggs and McFadden (1980) conducted a national review of existing data related to the effectiveness of family and consumer sciences programs. Although 82 documents were examined, only 46 studies investigated learner outcomes. The evaluations cited by Griggs and McFadden focused on the impact of program participation on students' knowledge, attitudes, and behaviors. Specific family and consumer sciences courses were found to affect student achievement in nutrition, child development, and consumer education. Students who studied foods and nutrition were found to have better nutrition practices than students who had not. Those enrolled in child development courses had increased awareness and sensitivity to children. Credit was reportedly used less often by students who had been instructed in the use of consumer credit than by students who had not had the instruction. Although many of the studies found evidence of effectiveness, Griggs and

McFadden determined that most of the studies focused on specific family and consumer sciences courses and not on an evaluation of the total program. Further, because control groups were infrequently used, findings were often inconclusive. Consequently, Griggs and McFadden concluded that additional research was needed. They recommended that future studies include representative random samples, geographic representation, longitudinal design components, and measures of program impact on learners.

The descriptive National Census Study conducted by Hughes, Rougvie, and Woods (1980) identified what content was being taught and what students were being served by secondary family and consumer sciences education programs in 1978-79. Based on an independent, systematic selection process within each state and territory, benchmark data were collected from 1,147 schools in 41 states and territories. This represented a 71% response rate. Of the 120 topics considered essential for programs, teachers reported food and nutrition topics were taught most frequently followed by family relations; clothing and textiles; child development and parenting; consumer education and management; and housing, home furnishing, and equipment. Teachers in approximately two-thirds of the schools in the sample reported that all 120 subject matter topics were being taught in their programs. About 20% of

students enrolled in programs surveyed were male. Although both males and females enrolled in all classes offered, male enrollments were higher in foods and nutrition, comprehensive homemaking, family relations, and consumer education. Females chose comprehensive homemaking, child development, foods and nutrition, and clothing and textiles more often than did males. Students who took more than one semester of classes or who enrolled in comprehensive courses received instruction in most of the topics deemed essential. Hughes, Rougvie, and Woods concluded that family and consumer sciences education programs were delivering essential subject matter content, but recommended more semester length courses be offered in an attempt to reach more students.

Drew, Jones, and Siegel (1981) investigated the responsiveness of secondary school programs in family and consumer sciences to the priorities outlined in the 1976 Amendments. Five populous states (California, Florida, Illinois, New York, and Texas) and five less populous states (Georgia, Idaho, Maine, Nebraska, and West Virginia) comprised the sample for the study. Ten local programs in each state were visited and over 500 respondents were interviewed. Those interviewed included state and local family and consumer sciences and vocational education administrators, teachers, teacher educators, superintendents, principals, advisory

council members, and other concerned persons. Findings revealed that programs in some states responded to aspects of the family and consumer sciences education legislation of 1976 better than others. Secondary adult living courses were most responsive in regard to subject matter content, student enrollments, and gender equity. Researchers discovered that more federal funds were going to the maintenance of traditional programs than to innovative programs which addressed the new priorities defined in the legislation. They suggested that not enough time had yet elapsed for innovations to have occurred in the programs. Drew, Jones, and Siegel completed their report by declaring that family and consumer sciences education programs do have an appropriate role in achieving vocational education goals for the nation and that federal funding should continue.

Evaluation Studies Reported Since 1989

Recent studies reported at professional meetings or in the literature beginning in 1990 are reviewed next. Those found have been conducted primarily in Florida, Illinois, Indiana, Iowa, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, Taiwan, Texas, and Utah.

To determine quantitatively if knowledge learned in family and consumer sciences classes was being used and

maintained after graduation, students in North Carolina and Florida who had taken at least three semesters of family and consumer sciences education were interviewed the fall after their graduation and then one year later (Gritzmacher et al., 1990). Randomly selected family and consumer sciences teachers in the two states supplied the names of eligible respondents. The sample included 450 students in 1984. One year later, researchers were able to contact 62% of the students in the original sample. Using the same interview schedule (either Form A or Form B) as in 1984, data were collected from 279 students in 1985 and matched with data obtained the previous year. Specifically, students provided demographic information and responded to five questions regarding their behavior in each of three content areas: parenting, nutrition, and consumer education. One goal of this longitudinal study was to determine if changes in scores for parenting, nutrition, and consumer education behaviors had occurred from one year to the next. Results indicated statistically significant differences ($p < .000$) on both Form A and Form B of the interview schedule for total scores. Form A showed a mean score loss of 29.7% while the mean score for Form B decreased by 28.1%. Researchers concluded that these losses were less than what might have been expected given the national average for forgetting learned information is 82%

after one month's time, according to work by Languis (as cited in Gritzmacher et al., 1990). Approximately 75% of what family and consumer sciences students in North Carolina and Florida had learned and were using in the areas of nutrition, parenting, and consumer education was still evident one year after graduation.

Clawson and Pestle (1990) further analyzed the data collected in these two states by conducting a content analysis of the specific behaviors reported by graduates. They found that students "gave the most appropriate responses to the questions asked about child development followed by foods and nutrition and consumer education items" (p. 25).

Researchers extended the longitudinal study of family and consumer sciences students in Florida to a second sample of graduates in 1985 and a third sample in 1986 (Pestle & Baum, 1991). A random sample of 30 teachers in the two geographic regions of Florida, north and south, supplied the names of all graduating students who had three or more semesters of family and consumer sciences education. For each sample of graduates, randomly selected students were interviewed the fall after graduation and one year later. Actual totals for each sample were as follows: north Florida samples in 1984 totaled 180 students for the first interview and 106 for the second; in 1985, 153 and 107 graduates respectively; and in

1986, 181 and 97. South Florida samples included 81 and 52 students in 1984, 74 and 64 in 1985, and 71 and 40 in 1986. The smaller number of respondents for each of the second interviews indicates the difficulty of conducting longitudinal research. Locating study participants from one year to the next can be problematic. Study results indicated mean total scores compared by total semesters of family and consumer sciences taken were higher for students in south Florida than for students in north Florida. In both geographic areas, second-year follow-up scores were generally lower than first-year scores.

As students in north Florida took 3, 4, 5, or 6 semesters of family and consumer sciences, their total mean scores increased in 1984 and 1985 for both time periods. However, in 1986, significantly higher scores were achieved the second year by those taking 3 or 6 semesters. In south Florida, mean total scores increased every year for both follow-ups of those taking three semesters of family and consumer sciences and those taking four semesters. However, only the second follow-up of 1984 graduates was significantly different. In south Florida, mean total scores increased every year for both follow-ups as the number of comprehensive courses increased. In north Florida, this was true only in 1985 and in the second-year interview of 1986 graduates. A detailed analysis

of data by semesters of child and family, food and nutrition, and consumer and management courses taken by north and south Florida graduates was also provided by Pestle and Baum.

From 1987 to 1990, the Illinois State Board of Education sponsored a research project to evaluate family and consumer sciences program outcomes in that state (Winsor, Cote, & Griswold, 1990). Researchers used telephone interviews to collect data from a stratified random sample of 333 students who had graduated from high school between 1979 and 1984. Respondents included students who had been enrolled in two or more family and consumer sciences classes and those who had no more than one class. Study participants were asked to rate both the importance of the concepts they had learned and their perceived competence in relation to them. Seven areas of family and consumer sciences education considered important for functioning as an adult were studied. Graduates considered family and consumer sciences concepts to be very important to them in their adult lives. All concepts received ratings above the midpoint on an 11-point scale, 0 (absolutely no importance/competence) to 10 (highest importance/competence), with many receiving ratings of 9.0 or above. Concepts rated highest in importance were those in parenting, adult living, resource management, child development, and foods and nutrition.

When the two kinds of ratings, importance and competence, were compared by the researchers, results revealed that respondents rated each of the 57 concepts as significantly more important than they rated their competence in that concept. Graduates who had enrolled in a specific family and consumer sciences content area course perceived themselves as having significantly higher competence levels in that subject matter than those who had not taken a specific course in the content area ($p = .05$). Those who had enrolled in family and consumer sciences educational programs believed they were significantly more competent in decision-making, time management, family crisis management, comparison shopping, and food selection than those who had not been enrolled. Further, former members of the family and consumer sciences leadership development program, FHA/HERO, rated themselves more competent in 27 of the 57 family and consumer sciences concepts than did students who had not been involved in FHA/HERO.

The image reported by high school students, their parents, and guidance counselors of family and consumer sciences education was assessed in an Iowa study (Wendland, 1990; Wendland & Schultz, 1991; Wendland & Torrie, 1991a, 1991b, 1991c). Whether or not students were currently enrolled in family and consumer sciences was a factor in the analysis of student responses. A random sample of 30 schools,

stratified by size, was selected for the study. Five junior or senior students who were currently enrolled in family and consumer sciences and five who were not enrolled composed the student sample in each school. A total of 179 juniors and seniors from 20 Iowa high schools reported their perceptions of six family and consumer sciences content areas using a semantic differential scale. Significant differences in perceptions were found for all six content areas between students who were enrolled and those who were not. The 91 students who reported they were enrolled in child development or parenting, family relations, food and nutrition, clothing and textiles, consumer education, or housing and home furnishings and equipment reported significantly more positive image perceptions of family and consumer sciences than did the 88 students not enrolled. The top two reasons reported for not enrolling were schedule conflicts and increased requirements for college entrance that did not include family and consumer sciences.

The needs, interests, and concerns of 387 eighth-grade students in Oklahoma were analyzed by Worley in 1990 to guide development of future family and consumer sciences curriculum. Students surveyed were enrolled in science classes in 22 randomly-selected schools and were representative of all eighth-grade students who attended a science class the day the

survey was administered. Subject areas surveyed included food preparation and physical fitness for better health; communication with family and friends; understanding of self and others; the construction of clothes, crafts, and items for their rooms; and exploration of careers. Enrollment in family and consumer sciences significantly affected mean scores as did the size of the school and district and students' gender and race. In four of the five subject areas about which students were surveyed, females showed more interest than did males. Making clothes, crafts, and items for their rooms was the area of most interest to students who had taken family and consumer classes or who were African-American. Less emphasis on clothing construction and more emphasis on communications, personal development, and family relations were recommended to curriculum developers as a result of the study.

Using a nonrandomized experimental-control group, pretest-posttest design, Lundsford and Clawson (1991) assessed students' achievement level in clothing and textiles following eight lessons delivered using the inquiry method of instruction. Students' attitudes toward the teaching approach and materials used were also evaluated. Seventy-four students composed the experimental group and 63 students made up the control group. The scores of the experimental group were statistically higher on the 66-item achievement test than were

the scores of the control group. No significant relationships were found among achievement scores and students' attitudes and grade level of students in grades 9, 10, and 11. For students in 12th grade, pretest scores, student semester clothing and textiles grades, class attendance, and teachers' attitudes were found to be significant predictors of posttest achievement scores.

During the 1990-91 school year, an eighth-grade comprehensive, semester-long family and consumer sciences course was developed and evaluated in a Utah school district (Caputo & Trenbeath, 1991). Using students' overall grade point average at the beginning of the school year as the basis, ten teachers classified students in each eighth-grade class participating in the study into three academic achievement groups (high 3.5-4.0, above average/average 3.4-2.5, average/below average 2.4-1.5). One eighth grader, randomly selected from each of the three achievement groups, completed an evaluation form at the end of each unit. A five-point scale was used by students to report the importance to them of each unit sub-concept. The subject matter content, learning activities, projects, evaluation methods, and general interest in the content were also evaluated by students. In addition, one group of 30 randomly selected parents of students in each achievement category completed evaluation

forms prior to the start of the course and a second group of 30 randomly selected parents assessed the course at its completion. Using a five-point rating scale, parents first evaluated the importance of the content they believed their children should know as eighth graders. They were asked to evaluate the content a second time for its importance to their children as adults. Field test teachers evaluated each unit in regard to subject matter content, learning experiences, teaching aids, format, and student interest. While no statistically significant differences were found in the analysis of either the student or the parent data among the three achievement groups, common themes were identified from the teacher, student, and parent information provided. Research results were expected to be helpful in revising the curriculum prior to a state-wide field test.

Preston (1991) used a quasi-experimental design to assess the effectiveness of Utah's Exemplary School Curriculum with seventh- and eighth-grade students in family and consumer sciences. Research questions examined students' pretest and posttest scores, impact of teacher training with the curriculum on students' scores, and the response of students and teachers to the curriculum. The sample included 505 students in existing classes taught by eight teachers. Differences in pretest and posttest scores on the nutrition

test, the fruit and vegetable test, and the total test were statistically significant with students scoring higher on posttests than on pretests. Students of teachers experienced in teaching the curriculum had scores significantly higher than those whose teachers who had only one training workshop prior to teaching the curriculum. A majority of students (63.9%) reported some learning or a lot of learning as a result of the curriculum. Evaluations revealed students were generally positive toward the curriculum and teachers were interested in using the curriculum. In addition, teachers made suggestions for improving the curriculum.

A multi-phase Texas study (Couch, Felstehausen, & Robinson, 1991) produced answers to ten major research questions including: What are life skills?; What essential life skills should be taught to secondary school students in grades seven through twelve?; Do students perceive they currently are able to perform activities representative of identified life skills?; What are students' perceptions of the importance of life skills for their future work and family lives?; and What is the relationship between students' future life expectations and their perceived need for life skills? In phase one, 48 telephone interviews with teachers, administrators, extension agents, community leaders, parents, and students produced 15 groups of life skills: academics,

balancing work and family, citizenship, communication, consumerism, cultural awareness, employability, health and wellness, household management, leadership, management, parenting and child care, personal development, relationships, and self-responsibility. Following validation of these categories by 1,519 participants at a statewide professional development meeting for family and consumer sciences teachers, the Life Skills Questionnaire (LSQ) for phase two of the project was developed. A nonrandom sample was drawn from the secondary student population which represented all geographic areas of Texas as well as various size schools. Family and consumer sciences, non-family and consumer sciences, vocational, non-vocational, at-risk, handicapped, disadvantaged, limited English proficient, male, and female students were represented in the sample. Using a six-point Likert scale from 1 (strongly disagree) to 6 (strongly agree), the 70-item LSQ measured students' perceptions of their current abilities to perform particular life skills and their need for life skills in the future. Data from 1,381 students in seventh through twelfth grades in 90 classes revealed students believed (mean = 4.63) they were able to perform the life skills identified on the survey. Students felt they were most able to take care of personal belongings, care about other people, practice good grooming, say no to harmful

things, and act appropriately with a person of the opposite sex. Students also believed (mean = 5.17) that life skills were important for the future. Skills related to employability, decision-making, and money and time management were seen as especially important for future success.

Students' perceptions of the future importance of life skills in relation to their expectations for their future work and family lives were the focus of the third phase of the Texas study (Couch & Felstehausen, 1992; Couch, Felstehausen, & Robinson, 1991). A sample of 305 secondary students was drawn from ten of the 27 schools which had participated in the first survey. Forty-one percent of the sample had completed the LSQ in the statewide survey. The 70 life skill items originally on the LSQ were reduced to 30 items and became the Future Application of Life Skills Survey (FALSS), one of three data collection instruments used with this sample. Using a scale of 1 (low) to 5 (high), students reported the importance of each item to their future work and family lives. On a scale of 1 (extremely unlikely) to 5 (extremely likely), students rated the likelihood of each future life event on the other two surveys taking place. The Interpersonal Future Likelihood Inventory (IFLI) listed 16 events related to interpersonal and family life while the Work Future Likelihood Inventory (WFLI) included 14 statements related to work life.

Findings revealed that students thought all 30 life skills on the FALSS were important to their future family and work lives. Mean scores for students' perceptions of life skills needed for future family life were highest for: make responsible decisions, accept responsibility for my own actions, feel good about myself, keep my body free of harmful drugs, budget my own money, and balance work and family responsibilities. Individual life skills receiving the highest means for future work life were: fill out a job application correctly, accept responsibility for my own actions, respect the rights of others, feel good about myself, keep my body free of harmful drugs, and make responsible decisions. Students perceived the following life skills to be less important for both their future family and work lives: write a descriptive paragraph, calculate percentages, eat a variety of foods from the daily food guide, and be a leader. In determining the relationship between students' ratings on the FALSS and ratings on the IFLI and the WFLI, the researchers used a factor analysis procedure to reduce the number of variables being compared. Five factors (non-traditional parenting, divorce and remarriage, marital and family situation, ethnic relationships, and interracial marriage) resulted in the interpersonal life inventory analysis and five factors (education and income, work

responsibilities, work schedule, dual-income marriages, and work environment) appeared in the work life inventory. Multiple regression procedures were then used to determine which factors in each inventory were predictive of scores on the life skills survey. Results indicated neither measure used alone was a good predictor of students' perceptions of the future importance of life skills. However, the future interpersonal and work expectation inventories were somewhat better predictors when used together. Researchers concluded these findings reinforce the interconnectedness of work and family life and support the integrative philosophy of family and consumer sciences education.

The final phase of the Texas study added a qualitative component to the research. Twenty-four students were interviewed to gain a greater understanding of their questionnaire responses and 18 adults were interviewed to develop a profile of each student. The sample was comprised of eight students who had completed the second survey from each of three schools in the original sample and two adults associated with each student. The adults were either teachers, counselors, or administrators in the three schools and most shared information about more than one student. Student interview data were analyzed to identify themes and patterns in regard to students' perceptions of the importance

of life skills in achieving expectations for their future family and work lives. Adult interview data were examined in regard to students' academic and social abilities, degree of family support, and future career plans. Qualitative findings were considered exploratory due to the small sample.

In the first year of a five-year study in Indiana, an evaluation instrument was developed and used to collect baseline data to document students' perceptions of the effectiveness of family and consumer sciences education in that state (Van Buren, 1991; Van Buren, 1992a). Data were collected from two groups of graduating seniors, completers and noncompleters. Completers were defined as students who had taken two or more semesters of family and consumer sciences while noncompleters had not taken any family and consumer sciences classes. Participating family and consumer sciences teachers administered the data collection instrument to seven completers and seven noncompleters in their schools. Usable response forms were returned from 811 students. The Life Skills Survey (LSS) used for data collection included 30 items. Students were asked to respond to each item in three ways: helpfulness-now, helpfulness-in-the-future, and can-do. None, some, or much were the response choices for the helpfulness scales while not at all, fair, or well were choices on the can-do scale. On all three scales, completers

scored significantly higher than noncompleters and females scored significantly higher than males.

In the second year of the study (Van Buren, 1992b), 796 students returned usable surveys. As in the previous year's findings, females scored significantly higher than males on all three scales. However, completers only scored significantly higher than noncompleters on the helpfulness-now and can-do scales as opposed to all three scales the year before. Results regarding annual data collected in the third, fourth, and fifth years of the study have not been published.

However, overall findings of the five-year study have been reported (Fox & Van Buren, 1994, 1995). The researchers found that, from 1990 to 1994, family and consumer sciences teachers from 316 of the 597 randomly selected small, medium, and large schools in Indiana returned usable surveys from 3,959 students. Volunteer student participants (2,026 completers and 1,933 noncompleters) had been selected through cluster and stratified random sampling procedures. The sample represented approximately 60% of Indiana's family and consumer sciences education programs (Fox & Van Buren, 1994). During the five years of data collection, mean scores of completers on individual items were significantly higher (W. S. Fox, personal communication, February 22, 1997) than those of noncompleters two times out of three. Completer scores were

significantly higher (W. S. Fox, personal communication, February 22, 1997) on the helpfulness-now and can-do scales four of the five years and on the helpfulness-in-the-future scale two of the five years. Completers always had mean scores that were higher than those of noncompleters (Fox & Van Buren, 1994, 1995). In general, female noncompleters and all male respondents had lower mean scores than female completers. Male noncompleters frequently had higher mean scores than male completers. Overall, students' scores on the helpfulness-in-the-future scale were higher than on the helpfulness-now and can-do scales. Results of this five-year longitudinal study demonstrated that students with family and consumer sciences instruction felt more competent about their abilities to perform life skills than did students without instruction. Family and consumer sciences students also rated the value of life skills to them now and in the future higher than did students who have taken no family and consumer sciences courses.

In an international study conducted by researchers at Iowa State University, Taiwanese junior high school students' perceptions of the importance of family and consumer sciences competencies and their perceived levels of performing these competencies were identified in a needs assessment by Horng (1992). Students responded to 62 competency statements

reflective of individual and family life using two Likert scales: 5 (very important) to 1 (not important) and 5 (well prepared) to 1 (I am not prepared). Usable questionnaires were returned by 943 students. Through a factor analysis, eleven factors emerged from the family and consumer sciences competency statements: family health, food and nutrition, consumer education, textiles and clothing, family living, child development, housing, clothing construction, leisure time activity, parenting, and resource management. For every factor, students judged its importance significantly higher than their ability to perform in that area. Based on students' mean scores, factors ranked as most important were family health, child development, resource management, parenting, and housing. Students believed they were most able to perform competencies within the family health, resource management, family living, textiles and clothing, and housing factors. Clothing maintenance was ranked least important and students also felt least prepared to perform in this area. Students' perceptions of the importance of competencies were compared with the perceptions of family and consumer sciences experts and teachers to formulate recommendations for revising the junior high family and consumer sciences curriculum in Taiwan, Republic of China.

Jenkins-Vulgamore and Laster (1992) found that the decision-making skill levels of seventh-grade family and consumer sciences students could be improved with just three months of decision-making instruction and practice. The pretest and posttest decision-making skill levels of 64 students in three reading level groups were evaluated at the beginning and end of a three month period using the developmentally appropriate Practical Problem Solving Test, Version C. Students across all three reading levels scored significantly higher on the posttest than on the pretest. Students with higher reading abilities showed the greatest gain in decision-making skill (75%). Although gains by students in the other two reading groups were not statistically significant, students with the lowest reading level still achieved a 55% increase in their decision-making abilities. Only 19% of the variance in students' decision-making levels could be attributed to the variables reading levels and posttest time. Eighty-one percent of the variance remained unaccounted for, even though age, gender, pretest time, and non-formal educational experiences such as 4-H and Scouts involvement and church and Sunday school attendance were also examined.

Nutrition knowledge, attitudes, and behaviors of secondary family and consumer sciences students were the focus

of a Pennsylvania evaluation study (Kokinda & Levine, 1992). The sample of 359 students was drawn from 13 randomly selected schools. Students were enrolled in family and consumer sciences programs and were in grades 9, 10, 11, and 12. A positive relationship was found between nutrition education and student achievement. Knowledge scores on the cognitive instrument were significantly higher for females than for males. As students' grade level increased, so did nutrition achievement scores. The number of family and consumer sciences courses taken by students had no significant effect on knowledge scores. Females had higher attitudinal means than did males. Students who reported a positive attitude toward nutrition also felt more strongly about the course work. In regard to nutrition behavior, nutrient dense foods were more likely to be chosen by females and by students with greater nutrition knowledge. Although the study found many students are informed about nutrition and choose foods wisely, researchers concluded a change was needed in nutrition education curriculum for family and consumer sciences programs in Pennsylvania. For all students to achieve a higher level of nutrition knowledge and incorporate desired nutrition behaviors into their lifestyles, the researchers recommended the development of transformational outcome-based curriculum modules.

The perceptions of 1,297 eighth-grade students regarding family and consumer sciences teaching as a career were examined by Lee in 1996. In addition, students reported their perceptions of the family and consumer sciences programs at their school and identified factors which might affect their future enrollment in family and consumer sciences and their choice of family and consumer sciences teaching as a career. Students were enrolled in one of the family and consumer sciences classes taught by 175 randomly-selected middle school teachers in North Carolina. Descriptive statistics of the data revealed 80.5% of the students had positive attitudes towards their middle school family and consumer sciences classes and more than half (59.6%) planned to take family and consumer sciences classes at the high school level. Reasons given for their future enrollment plans included: they liked their current family and consumer sciences course or they thought a high school family and consumer sciences class would prepare them for the future. Those not planning to enroll responded they were dissatisfied with their current family and consumer sciences class or they planned to take other courses in high school. Nearly 52% of students revealed positive perceptions of the career, family and consumer sciences teacher. Factors influencing 16% of the students surveyed to show interest in pursuing family and consumer sciences

teaching as a career included the desire to help others or anticipated enjoyment of the job. Problem students and cooking and sewing job responsibilities were factors reported for not wanting to pursue family and consumer sciences teaching as a career.

Summary

This literature review reveals that (1) more longitudinal family and consumer sciences studies are being conducted, (2) multiple family and consumer sciences content areas are being examined within individual studies; (3) researchers are collaborating in the replication of studies across states; and (4) high school seniors with and without family and consumer sciences instruction are frequently the subjects of comparison for many studies. Limitations still exist in the current literature base. Some subjects have not been selected using random sampling techniques and, therefore, population generalizability is reduced. Some studies have not included a control group for comparison; this limits the conclusions that can be drawn regarding the treatment effects. A variety of evaluation criteria continues to be used by researchers, making comparisons between studies difficult. Finally, results of a large number of studies reported through abstracts of meeting presentations fail to be published in

referred journals of the profession. This finding seriously jeopardizes the growth of the body of knowledge related to family and consumer sciences program effectiveness.

This review of literature and Griggs and McFadden's (1980) suggestions for additional research with the following components influenced the design of this research study:

(1) stratified random sampling techniques were employed to increase population generalizability and ensure geographic representativeness, (2) a longitudinal component was included, and (3) the impact of family and consumer sciences programs on learners was assessed by comparing students having greater amounts of family and consumer sciences education with similar students with less family and consumer sciences instruction.

This study provided baseline data for evaluating the effectiveness of secondary school family and consumer sciences programs in Iowa as perceived by students.

CHAPTER 3: METHODOLOGY

This program evaluation study used a causal-comparative design to evaluate Iowa's secondary school family and consumer sciences programs. Causal-comparative research, or ex post facto ("after the fact") research, "attempts to determine the cause or consequences of differences that already exist between or among groups of individuals" (Fraenkel & Wallen, 1993, p. 317). Collecting evidence to document the effectiveness of family and consumer sciences education leading to the attainment of state-mandated minimum program competencies as perceived by students was the purpose of this study. The independent variable was the number of semester courses in family and consumer sciences that students had completed in grades 9-12. Students were selected in two groups: those with three or more semesters of family and consumer sciences and those with one semester or less. The dependent variable was the degree to which family and consumer sciences competencies were attained as measured by the researcher-designed questionnaire, *How Ready For Life Are You?* (Appendix G).

Population and Sample

The population for this study consisted of 34,565 high school seniors in 407 schools in Iowa which offered family and consumer sciences programs during the 1995-96 school year according to information supplied by the Iowa Department of Education. A two-stage stratified random sampling procedure was used in the study. In phase one, a stratified random sample of 152 (37%) schools was selected by the researcher. The school sample was stratified in relation to the fifteen educational regions of Iowa to ensure a balanced representation from each geographical area of the state. Following Fraenkel and Wallen's (1993) procedure for stratified random sampling and Gall, Borg, and Gall's (1996) definition of proportional stratified sampling, the sample maintained the same proportion of schools in each region as existed in the population. Within each selected school, a family and consumer sciences teacher was randomly chosen to participate in the study.

Approval to conduct the research was granted by the Human Subjects Review Committee at Iowa State University (Appendix A). An alert postcard (Appendix B) introduced the study and invited selected teachers to participate. More detailed information followed through a letter (Appendix C) to each selected teacher. The role and responsibilities that teachers

were asked to fulfill were explained and procedures for the project were provided in a direction sheet (Appendix D).

Phase two of the sampling procedure was conducted by teachers who agreed to participate in this study. They were asked to select randomly two students (preferably one male and one female) from the 1995-96 graduating class who had three or more semesters of family and consumer sciences in grades 9-12 and two students (preferably one male and one female) from the 1995-96 graduating class who had one semester or less of family and consumer sciences instruction in grades 9-12. A detailed sampling procedure (Appendix E) was provided to teachers to ensure uniformity in the student selection process. Teachers were instructed not to eliminate students from the sample because of their academic standing, socioeconomic status, attendance record, or history of discipline problems. A sample of 608 students, representative of all graduating high school seniors in Iowa in 1996, had been anticipated if each of the 152 invited schools had been qualified to participate and had each chosen four students. Eight teachers identified their schools as inappropriate participants for the study based on extenuating circumstances such as service as a long-term substitute teacher, inappropriate family and consumer sciences program offerings, or being the inappropriate teacher to receive the

questionnaires. Dillman (1978) indicates that the response rate may be calculated by excluding such cases from the original sample. In doing so, 144 schools therefore comprised the school sample rather than the 152 initially contacted. Consequently, this reduced the data-producing student sample to 576 students. Multiple follow-up attempts failed to generate responses from 46 schools, leaving 98 schools (68%) that provided data on 360 students (62.5%).

Instrument Development

An abridgment process was used by the researcher to create a student questionnaire, *How Ready For Life Are You?* (Appendix G). Part I of the instrument was designed to measure students' level of attainment of the Iowa minimum competencies for secondary school family and consumer sciences programs in the content areas of housing and home management; food and nutrition; individual and family health; personal and family living; consumer education and resource management; textiles and clothing; child development and parenting; and leadership, job getting and job keeping, and entrepreneurship (Iowa Department of Education, 1991). The goal of the abridgment process was not to delete key competencies or to prioritize existing competencies. Rather the rationale was to reduce the 122 competencies to a more manageable number by

(a) eliminating the redundancy of similar competencies repeated across several content areas, (b) consolidating competencies with similar content within any one content area, (c) minimizing the focus on core competencies for leadership, job getting and job keeping, and entrepreneurship taught in all vocational education programs, and (d) creating new competencies that summarized a group of previous competencies, all of which led to a specific life task, e.g., four competencies related to food and nutrition were combined to read *use basic safety, sanitation, and kitchen skills in preparing, serving, and storing food*. Project researchers believed the abridged list of competencies would be more user-friendly to students and therefore more suitable for research purposes. The goal was to enhance the student response rate.

A comparison of Iowa's 122 minimum competencies for family and consumer sciences programs with those of Louisiana (Daniel & Stewart, 1984), Nebraska (Johnson, 1986), and Texas (Couch, Felstehausen, & Robinson, 1991) was one step in the abridgment process. Based on these comparisons as well as professional judgment, the three project researchers—the one studying teachers, this researcher who was studying students, and the faculty member guiding the research—made the following decisions, which resulted in an abridged version of the Iowa competencies: (1) nine competencies related to locating and

utilizing resources found in several content areas were abridged to become one; (2) seven competencies related to examining family and consumer sciences-related occupations were reduced to one; (3) two competencies related to money management were consolidated into one; (4) eight competencies related to physical and mental health issues were collapsed into two; (5) 13 competencies outlining specific characteristics of leadership were reduced to one; (6) 29 job getting and job keeping competencies were reduced to one; (7) four entrepreneurship competencies were collapsed into one; (8) 49 competencies were rewritten to create 28 comprehensive competencies more in keeping with the scope of the other competencies in the list, and (9) one competency, *use good manners when eating and entertaining*, was added. Initially, these decisions resulted in the 122 minimum program competencies being abridged to 39 competencies.

Through their careful review of the abridged competencies, content-related evidence of validity was established by four family and consumer sciences teachers selected from those not in the sample and from several areas across the state, two family and consumer sciences teacher educators at Iowa State University, one of the family and consumer sciences education consultants in the Iowa Department of Education, and the three writers of the original family and

consumer sciences competencies section of the Vocational-Technical Education *Program Management Guide* (Iowa Department of Education, 1993). These expert reviewers received by mail or hand delivery either a version of the competencies showing both the original 122 competencies and the abridged competencies or a shorter version showing only the abridged competencies. The longer version was reviewed by the three writers of the family and consumer sciences section of the Vocational-Technical Education *Program Management Guide* and a teacher educator responsible for teaching curriculum methodology to undergraduates. The abridged version of the competencies was reviewed by one teacher educator with extensive experience in evaluation instrument development and four family and consumer sciences teachers. The family and consumer sciences education consultant in the Iowa Department of Education reviewed both versions of the competencies. Each reviewer of the abridged competencies was asked to answer the following four questions: (1) "Do the statements represent the minimum competencies for each of the seven content areas you would expect to find in that content area in a family and consumer sciences program in a secondary school in Iowa?", (2) "If not, what competencies are missing?", (3) "Are there any redundancies among the competencies within each content area or across content areas?", and (4) "Is the wording of

each competency statement clear?" In addition, those reviewers receiving both the original and the abridged competencies were asked to evaluate whether essential content was lost in the abridgment process.

The validation of the abridged competencies by the reviewers resulted in minor revisions to the competency statements, the elimination of three competencies, and the addition of two new competencies, one related to evaluating the forces which impact the individual and family and the second related to addressing the impact of technology on all family and consumer sciences content areas.

Specifically, the initial abridgment decisions made by the research team and the recommendations made by the expert reviewers resulted in the 122 minimum program competencies being abridged by content area as follows: housing and home management, reduced from 11 to 4; food and nutrition, 10 to 5; individual and family health, 8 to 2; personal and family living, 18 to 7; consumer education and resource management, 5 to 3; textiles and clothing, 11 to 4; child development and parenting, 13 to 7; and leadership, job getting and job keeping, and entrepreneurship, 46 to 6. The final student questionnaire contained 38 family and consumer sciences program competencies.

Next, this revised instrument was piloted for usability by eight family and consumer sciences teachers with 30 high school seniors at eight schools not in the final sample. Additional revisions were made to the student questionnaire and the accompanying directions based on recommendations from university faculty reviewers and from the pilot test results.

The final version of the questionnaire was organized into two components. In Part I, students were asked to describe their degree of readiness to perform the 38 family and consumer sciences competencies listed. The response format was a 7-point Likert-type scale with three descriptive anchor points: 1 (not ready at all), 4 (somewhat ready), and 7 (completely ready). A 7-point scale was selected for two reasons. In discussing the appropriate number of steps to use for rating scales, Nunnally (1978) reports that a further increase in the reliability of scales "tends to level off at about 7..." (p. 595). In addition, the use of a scale with both numbers and words is more helpful in communicating the idea of a rating continuum than is a numerical scale without descriptive word anchors. To increase efficiency in the transfer of student responses to a data file, rather than answering directly on the questionnaire, students responded by darkening the appropriate number on a machine-scored answer sheet for each item on the questionnaire. Data then could be

transferred directly into a data base by having the answer sheets "read" by computer scanner.

In Part II of the questionnaire, data were requested about the personal and demographic characteristics of students. Items 39 through 47 solicited demographic information on students' gender, ethnic origin, size of graduating class, academic rank, marital status, number of children, family income, employment status, and family structure. Items 48 through 110 sought data on students' membership in organizations, amount and kind of family and consumer sciences instruction, reasons for enrolling or not enrolling in family and consumer sciences courses, and preferred sources of information.

Data Collection

Approval to conduct the research and collect data using a mailed questionnaire was granted by the Human Subjects Review Committee at Iowa State University (Appendix A). Permission to participate in the study was obtained by each family and consumer sciences teacher from the school principal or a district administrator if required by school policies (Appendix H). The first mailing was sent in April using first class postage one week after the alert postcard had been mailed. It included the following materials: a personalized

letter to teachers on official Iowa State University department stationery with original signatures (Appendix C), directions for teachers to follow in implementing the project (Appendix D), procedures for selecting students (Appendix E), four form letters addressed to students and printed on department stationery with original signatures (Appendix F), four copies of the *How Ready For Life Are You?* data collection instrument (Appendix G), a form for obtaining school or district permission to participate in the study (Appendix H), five pencils with the College of Family and Consumer Sciences' name and logo as a small token of appreciation to the participating teacher and students, and an individually-packaged flavored tea bag for the teacher's enjoyment.

All research materials were mailed to and returned by the selected family and consumer sciences teacher in each participating school. Teachers were asked to use the sampling procedure outlined (Appendix E) to randomly select two students (preferably one male and one female) from the 1995-96 graduating class who had three or more semesters of family and consumer sciences in grades 9-12 and two students (preferably one male and one female) from the 1995-96 graduating class who had one semester or less of family and consumer sciences instruction in grades 9-12. This teacher then administered the questionnaire to each of the four students selected by her

(there were no male teachers in the sample). A self-addressed, postage-paid envelope was provided for the return of student response sheets. Envelopes were coded to identify returns and permit follow-up contacts to nonresponding teachers.

Techniques used to increase the student response rate included a letter addressed to students selected to participate in the study (Appendix F), a reminder postcard to all teachers one week after questionnaires were mailed (Appendix I), and a second postcard to nonresponding teachers ten days after the first (Appendix J). A second letter and complete set of data collection materials were sent to all nonrespondent teachers one month after the first mailing (Appendix K). Follow-up phone calls were made to nonrespondent teachers the third week of May and a final handwritten personal note (Appendix L) was sent to all nonrespondent teachers June 1. Thank-you postcards (Appendix M) were sent to all responding teachers as questionnaire responses were received. A more formal and personalized expression of appreciation was sent on department stationery with original signatures to participating teachers at the end of the research endeavor (Appendix N). Rulers (Appendix O) were also sent with this correspondence as a token of

appreciation to the teacher and students for their involvement in the research.

Response sheets were returned by teachers from 98 schools for 360 students, resulting in a school response rate of 68% and a student response rate of 62.5%. Not all teachers returned four student response forms. The number of student responses for each of the 98 responding schools ranged from one to four. Eighty-one of the schools returned four student responses, six returned three, seven returned two, and four returned one. In addition, 51 students indicated they had two semesters of family and consumer sciences education. From the information available, it could not be determined if teachers had made errors in their student selection procedure or if these students had incorrectly reported the number of semesters of instruction they had taken. Further, six students failed to indicate how many semesters of family and consumer sciences they had taken and three demonstrated inappropriate response patterns throughout the instrument. These 60 students were eliminated from the data files.

Finally, 27 teachers returned student questionnaires in group proportions different than requested. Teachers were asked to select two students who had three semesters or more of family and consumer sciences and two students who had one semester or less of instruction. Instead, 11 teachers sent

three questionnaires from students who met the three or more semesters criteria and 16 different teachers sent three questionnaires from students who met the one semester or less criteria. To maintain the group proportions requested from each school, one student from each of the 27 groups of three questionnaires received was eliminated randomly. These unpredictable, but necessary, deletions to the sample resulted in 273 usable questionnaires. The total number of students with one semester or less of family and consumer sciences education totaled 135 (53% males, 47% females). Students with three or more semesters of instruction totaled 138 (34% males, 66% females).

The usable cases represented 47% of the 576 possible student responses from the 144 schools in the sample. Losing 87 subjects—51 who had two semesters of family and consumer sciences, 6 who failed to indicate how many semesters of family and consumer sciences they had taken, 3 who had inappropriate response patterns, and 27 who exceeded the requested sample proportion per school—represents a 15% loss of the originally selected sample. Fraenkel and Wallen (1993) advise researchers who lose over 10% "to acknowledge this limitation and qualify their conclusions accordingly" (p. 94) as this affects the external validity of a study in regard to its generalizability to a wider population. Therefore, the

conclusions of this study must be considered within this limitation.

Ten students used all 10 points on the machine-scored answer sheet instead of the seven requested for questionnaire items 1 through 38. Because students were indicating stronger feelings of readiness than the maximum scale value of one through seven allowed, responses recorded as 8, 9, or 10 were recoded as 7.

Interest in participating in a follow-up study that would compare students' responses two to five years after graduation was expressed by 56 students. Twenty-four students (18 females and 6 males) in the one-semester-or-less group and 25 students (21 females and 4 males) provided a permanent address and telephone number where a contact could be made at this later time. An additional seven students (six females and one male) indicated a willingness to be involved in a follow-up study. However, each had two semesters of family and consumer sciences instruction and therefore did not qualify for either comparison group to be used in a follow-up study. The names of students qualified to be involved, their addresses and phone numbers, and their coded response sheets from this study are maintained in a secured file in the Department of Family and Consumer Sciences Education and Studies at 219 MacKay Hall on the campus of Iowa State University and by the researcher.

Persons interested in this information for follow-up research purposes may contact either party. The small number of students responding to the follow-up request likely can be attributed to the location of the request at the end of the questionnaire and the voluntary nature of the request. Regretfully, no emphasis was placed on the follow-up aspect of the research in correspondence to either teachers or students.

Data Analysis

To reduce machine-scoring errors, student response sheets were reviewed carefully. Stray pencil marks were erased and circles not completely darkened were filled. Student names found on some response forms were erased to protect the anonymity of students. A unique identification number was assigned to each response form and was coded to reveal the student's geographical area, school, gender, and amount of exposure to family and consumer sciences instruction. The identification numbers also indicated how many student questionnaires were received from each participating school. Cleaned and coded response sheets were scanned optically by machine. This process was handled by the Test and Evaluation Services staff at Iowa State University. The process transferred student answers on the response sheets to a computer data file.

Variables in the data file for each student were coded for statistical analysis. In doing so, each item of the questionnaire was given a unique variable name and value labels for desired responses were assigned to each variable. Data were analyzed using both descriptive and inferential statistics. The computer software program SPSS for Windows Version 7.0 was used for all analyses. The overall difference in the self-perceived level of attainment of students who had three or more semesters of family and consumer sciences education and the self-perceived level of attainment of those who had one semester or less of instruction was analyzed using a single-classification analysis of variance (ANOVA). Differences in attainment by individual competency and content area were analyzed using one-tailed *t*-tests. The potential role of demographic factors—gender, ethnic origin, size of graduating class, academic rank, marital status, number of children, household income, employment status, family structure, membership in organizations, kind and amount of family and consumer sciences instruction, and preferred sources of information—in the attainment of competencies was explored using Pearson product-moment correlation coefficients and multiple regression techniques.

CHAPTER 4: FINDINGS AND DISCUSSION

The purpose of this research was to evaluate students' perceptions of the effectiveness of Iowa's secondary school family and consumer sciences programs in delivering education that is to lead to attainment of the mandated minimum program competencies. The primary goal of the study was to contrast the self-perceived level of competence of family and consumer sciences students who were graduating seniors and had three or more semesters of family and consumer sciences education with the self-perceived level of competence of students at the same level who had one semester or less of family and consumer sciences instruction.

Additional objectives of the study were to:

1. describe and compare the personal and demographic characteristics—gender, ethnic origin, size of graduating class, academic rank, marital status, number of children, family income, employment status, family structure, membership in organizations, kind and amount of family and consumer sciences instruction, and preferred sources of information—of students in each of the two groups
2. determine the effect of students' personal and demographic characteristics on competency attainment

3. identify students' reasons for enrolling or not enrolling in family and consumer sciences courses

4. based on the research findings, identify strengths of family and consumer sciences programs in Iowa and make recommendations for the revalidation of minimum program competencies.

A mailed student questionnaire, *How Ready For Life Are You?* (Appendix G), was developed to collect data for the study. Part I of the instrument was designed to measure students' perceived level of attainment of the Iowa minimum competencies for secondary school family and consumer sciences programs. Part II was designed to collect data regarding students' personal and demographic characteristics and to identify students' reasons for enrolling or not enrolling in family and consumer sciences courses.

The population for this study consisted of 34,565 high school seniors in 407 schools in Iowa which offered family and consumer sciences programs during the 1995-96 school year according to information supplied by the Iowa Department of Education. A two-stage stratified random sampling procedure was used in the study. In phase one, a stratified random sample of 152 (37%) schools was selected by the researcher. Eight teachers identified their schools as inappropriate participants for the study; therefore, 144 schools comprised

the school sample. In phase two, a family and consumer sciences teacher in each selected school was asked to select randomly four students from the 1995-96 graduating class—two (preferably one male and one female) who had three or more semesters of family and consumer sciences and two (preferably one male and one female) who had one semester or less of family and consumer sciences instruction. The teacher administered the survey to each of the students selected by her. Data were returned by teachers from 98 (68%) schools for 360 (62.5%) students. Usable data from 273 (47%) students were analyzed using descriptive and inferential statistics. Research findings are presented as follows: (a) personal and demographic characteristics of the sample, (b) differences in perceived level of competency attainment between students who had three semesters or more of family and consumer sciences and those who had one semester or less, (c) relationships between students' personal and demographic characteristics and their perceived level of competency attainment, and (d) reasons given for enrolling or not enrolling in family and consumer sciences.

Personal and Demographic Characteristics

In Part II of the questionnaire, students were asked to provide information about themselves. Data were collected on

gender, ethnic origin, size of graduating class, academic rank, family structure, household income, employment status, marital status, number of children, membership in organizations, kind and amount of family and consumer sciences instruction, and sources used for information. *T*-tests were used to analyze differences in personal and demographic characteristics between students who had three semesters or more of family and consumer sciences and those with one semester or less of instruction.

Gender and ethnic origin

Overall, the student sample was composed of 44% males and 56% females. This finding indicated that teachers were diligent in following the sampling procedures outlined for selecting students of both genders in each school; their efforts helped to ensure a good gender balance in the study. However, as data in Table 1 indicates, nearly twice as many females as males comprised the group of students with three semesters or more of family and consumer sciences. This gender difference between groups was significant at the .001 level. This finding was anticipated and may confirm the continuing stereotypes about roles based on gender. If it is believed that females have the primary responsibility for balancing work and family responsibilities, then it also is likely that females are more likely than males to enroll in a family

Table 1. Gender and racial origin of students

	One semester or less (n = 135)		Three semesters or more (n = 138)	
	Frequency ^a	%	Frequency ^b	%
Gender				
Male	72	53	47	34
Female	63	47	91	66
Total	135	100	138	100
Racial Origin				
Caucasian	122	92	129	94
Non-caucasian	11	8	8	6
Total	133	100	137	100

^a Frequency may not total 135 due to missing data.

^b Frequency may not total 138 due to missing data.

and consumer sciences class more than once. When comparing national enrollment findings, Hughes, Rougvie, and Woods (1980) revealed an increase in male enrollments in family and consumer sciences classes from 2% in 1962 to 19% in 1980. Although this study did not collect class enrollment data, having 33% males among the three-semesters-or-more group in 1996 in Iowa is encouraging. However, this finding does not lessen the continued need to work toward equity in role expectations. If the ability of both males and females to make more balanced and effective contributions to both career and family roles is to be enhanced, the marketing of family and consumer sciences courses to males as well as females needs to be emphasized.

Of the 270 students reporting racial background, 93% were Caucasian and 7% were African-American, Asian, Hispanic, American-Indian, or members of other ethnic groups. This finding was consistent with the 12th grade public school population for the 1995-96 school year as reported by the Iowa Department of Education, in which 94% of the population was Caucasian and 6% was non-Caucasian. Both student comparison groups were similar in racial origins (Table 1).

Family structure, household income, and employment status

Although differences existed in family structure, household income, and employment status between students with three or more semesters of family and consumer sciences and those with one semester or less, these differences were not significant. As the information in Table 2 shows, most students (78%) lived with two parents, with 10% being blended families. Eighteen percent lived with only one parent. A greater number of students in the three-semesters-or-more group lived in single-parent and blended households than did students in the one-semester-or-less group. Seven students reported that they lived alone.

More students in the one-semester-or-less group reported living in families with incomes of \$30,000 to \$39,999 and with incomes of \$50,000 or more than did students in the three-semesters-or-more group. In contrast, more students who had

three semesters or more of family and consumer sciences reported living in families with incomes of \$29,999 or less than did those in the one-semester-or-less group.

More than three-fourths of all students in the sample worked for pay. An equal percentage of students in each group worked fewer than 20 hours per week. However, slightly more students who had three semesters or more of family and consumer sciences worked 20 or more hours per week than did students who had one semester or less of instruction. Slightly fewer students (100) in the one-semester-or-less group were employed compared to those (109) in the three-semesters-or-more group. Since students in the three-semesters-or-more group reported living in families with less income than did students in the one-semester-or-less group, household income may be one reason why students in the three-semesters-or-more group worked longer hours. Parents with higher incomes should be targets for marketing family and consumer sciences programs if we believe their children also can benefit from enrolling in one or more family and consumer sciences courses.

Size of graduating class and academic rank

As was anticipated because of Iowa's rural character and few large population centers, 72% of the students in the sample were from schools with a graduating class of fewer

Table 2. Family structure, household income, and employment status of students

	One semester or less (n = 135)		Three semesters or more (n = 138)	
	Frequency ^a	%	Frequency ^b	%
Family Structure				
Two parents	99	74	87	63
One parent	21	16	28	20
Blended family	8	6	18	13
Living with relative	0	0	1	1
Living with non-relative	2	2	1	1
Living alone	4	3	3	2
Household Income				
\$10,000 to \$19,999	12	14	17	19
\$20,000 to \$29,999	15	17	27	29
\$30,000 to \$39,999	21	24	16	17
\$40,000 to \$49,999	16	18	16	17
\$50,000 or more	25	28	16	17
Employment Status				
20 or more hours weekly	57	42	65	47
Fewer than 20 hours weekly	43	32	44	32
Not employed	35	26	29	21

^a Frequency may not total 135 due to missing data.

^b Frequency may not total 138 due to missing data.

than 100 students. Nineteen percent attended schools with 100-199 seniors. Only 9% had a graduating class of 200 or more.

A significant difference ($p < .01$) was found in the academic rank between students in the sample. As shown in Table 3, students in this study who had taken three or more semesters of family and consumer sciences ranked lower

academically than did those students who had one semester or less of instruction. More students in the one-semester-or-less

Table 3. Students' academic rank in graduating class

Academic Rank	One semester or less (n = 135)		Three semesters or more (n = 138)	
	Frequency ^a	%	Frequency ^b	%
Top quartile	45	34.6	31	22.8
Third quartile	46	35.4	42	30.9
Second quartile	28	21.5	50	36.8
Bottom quartile	11	8.5	13	9.6

^a Frequency may not total 135 due to missing data.

^b Frequency may not total 138 due to missing data.

group reported ranking in the top quartile of their graduating class than did students in the three-semesters-or-more group. Both groups had similar numbers of students in the bottom quartile. These findings support the frequently-heard complaint from family and consumer sciences teachers that their courses tend to be seen by high school guidance counselors and parents as a place for students with lower ability levels rather than for academically gifted students. If one believes that high-achieving students are discouraged from taking family and consumer sciences courses, then marketing techniques aimed at attracting students of all ability levels to family and consumer sciences classes need to be put in place.

Marital status and number of children

No significant differences were found between the two groups of students regarding their marital status or number of children. As expected, the vast majority (95%) of students in the sample were single. Eleven students (4%) indicated they were engaged; five in the one-semester-or-less group and six in the three-semesters-or-more group. Two students (1%), one in each comparison group, were married.

Similar findings were reported in regard to children. Ninety-six percent of all students did not have children. Ten students (4%) out of 272 who answered this question reported having children. Eight students, four in each comparison group, had one child. Two students, one per comparison group, reported having two children.

Membership in organizations

Data in Table 4 reveal that memberships in organizations are similar for both groups of students in this study. For both groups, the number of memberships in athletic organizations, church-related youth groups, or school service clubs was ranked first, second, and third respectively. These results indicated that students in both comparison groups had similar interests in extracurricular activities, with only minor membership differences existing between groups in seven of the nine organizations listed. However, students who had

three or more semesters of family and consumer sciences education were twice as likely to be members of Future Homemakers of America (FHA) and Home Economics Related

Table 4. Students' membership in organizations

Organization	One semester or less (n = 135)		Three semesters or more (n = 138)	
	Frequency ^a	%	Frequency ^b	%
Future Homemakers of America (FHA)	16	12	32	23
Home Economics Related Occupations (HERO)	7	5	13	9
4-H	33	24	38	28
Church-related youth group	91	68	92	67
Community-related group	31	23	38	28
Vocational student organization other than FHA or HERO	29	22	27	20
Honor society	38	28	34	25
Athletic group	105	78	102	74
School service club	48	36	51	37

^a Multiple responses are possible; therefore, the total exceeds 135.

^b Multiple responses are possible; therefore, the total exceeds 138.

Occupations (HERO) than were students with one semester or less of instruction. This finding suggests that longer student involvement in family and consumer sciences classes

more likely leads to membership in FHA and HERO. Similar levels of involvement in vocational student organizations other than FHA or HERO, such as Future Business Leaders of America (FBLA) or Distributive Education Clubs of America (DECA), were reported by both groups of students. Twenty-nine students having one semester or less of instruction indicated membership in another vocational student organization while twenty-seven in the three-semesters-or-more comparison group did so. When membership characteristics were compared using *t*-tests, a significant difference ($p < .01$) was found in only one organization, Future Homemakers of America.

Length of content instruction

Questionnaire items 58, 60, 62, 64, 66, 68, and 70 asked students how long they had studied seven family and consumer sciences content areas in grades 7 through 12. More than half reported they had never had instruction in three content areas—consumer education and resource management (73%); housing and home management (63%); and clothing and textiles (54%). Food and nutrition was studied most frequently when one semester (35%); two semesters (18%); or three semesters (8%) of concentrated study in a content area was pursued. Findings in Table 5 reveal that students' mean scores by content area did not progressively increase as the length of

Table 5. Students' perceived competence by length of instruction in grades 7-12

	HHM		FN		IFH		PFL		CERM		TC		CDP	
	Mean ^a	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Never Studied	4.58	1.30	5.58	1.02	5.47	.97	5.40	.89	5.40	.98	4.85	1.09	4.66	1.38
Less than 6 weeks	4.24	1.24	5.53	1.04	5.63	1.01	5.37	.81	5.38	.87	4.82	1.21	5.24	1.28
6-8 weeks	5.45	1.16	6.07	.78	5.50	1.00	5.45	.86	6.04	1.05	5.12	1.15	3.84	1.65
9-12 weeks	5.03	1.02	5.76	1.05	5.91	.89	5.91	.78	5.87	.96	4.89	1.57	5.85	.88
One Semester	5.44	1.02	5.91	.84	5.58	.95	5.84	.71	5.69	.99	5.57	1.18	5.60	1.09
Two Semesters	5.08	1.32	6.14	.86	5.62	1.06	5.74	.80	5.22	.78	5.92	.99	5.51	1.32
More than two semesters	5.25	1.41	5.91	.76	4.96	.92	5.19	1.11	6.11	1.02	6.42	1.01	6.39	.70

^a Using a 7-point scale with anchors 1 (not ready at all), 4 (somewhat ready), and 7 (completely ready).

Note: HHM = Housing and Home Management
 FN = Food and Nutrition
 IFH = Individual and Family Health
 PFL = Personal and Family Living
 CERM = Consumer Education and Resource Management
 TC = Textiles and Clothing
 CDP = Child Development and Parenting

study in that content area increased. However, for five of the seven content areas evaluated, a significant positive correlation existed between the length of time students had instruction in a particular content area and their perceived competence in that area (Table 6). Hinkle, Wiersma, and Jurs

Table 6. Correlation coefficients (r) for students' perceived competence

	Content Area						
	HHM	FN	IFH	PFL	CERM	TC	CDD
Length of time studied	.258**	.188**	.001	.205**	.097	.302**	.334**
Note: HHM = Housing and Home Management FN = Food and Nutrition IFH = Individual and Family Health PFL = Personal and Family Living CERM = Consumer Education and Resource Management TC = Textiles and Clothing CDD = Child Development and Parenting							

** $p < .01$.

(1994) recommend interpreting correlation coefficients less than .30 as indicative of little if any relationship and those .30-.50 as low correlations. Therefore, although these correlations were significant, only 4% to 11% of the variance in students' perceived competence by content area was accounted for by the length of their study in that area. Significant relationships were not found for these variables

in relation to the individual and family health and consumer education and resource management content areas.

Preferred sources for information

From a list of 11 common sources of information, students were asked to identify which they used to obtain information. Findings indicated that students from both groups use the same top five sources, although ranked in different order (Table 7). Significant differences were found in students' use of books ($p < .001$) and seminars or workshops ($p < .05$) between students in the three-semester-or-more group and those in the one-semester-or-less group). Neither group appears to be using newer technologies as a source of information; the Internet and computer software were among the least-used information sources for both groups. Although reasons for this lack of use were not gathered in this study, findings may be due to lack of equipment or software, lack of access to the Internet, or lack of awareness of information available from these sources. Research could be conducted to determine the extent to which Iowa family and consumer sciences teachers and students have access to new technology. Once newer technology is available, family and consumer sciences teachers might consider using these sources of information to deliver subject matter in the classroom or encouraging use of these sources by students in the completion of assignments or projects.

Table 7. Sources of information used by students

	One semester or less (n = 135)			Three semesters or more (n = 138)		
	Frequency ^a	%	Rank	Frequency ^b	%	Rank
Books	88	67	4	117	88	1
Magazines	110	82	2	116	85	2
Newspapers	96	72	3	88	65	5
Video tapes	82	61	5	97	71	4
Audio tapes	27	20	9	32	24	9
Compact discs	25	19	10	28	21	10.5
Seminars or workshops	33	25	8	49	36	8
Internet or World Wide Web	22	16	11	28	21	10.5
Computer soft- ware programs	37	28	7	51	38	7
Television	113	84	1	111	82	3
Radio	69	52	6	59	44	6

^a Multiple responses were possible; therefore, the total exceeded 135.

^b Multiple responses were possible; therefore, the total exceeded 138.

Level of Competency Attainment

As shown in Table 8, students who had three or more semesters of family and consumer sciences had mean scores higher than students who had one semester or less of family and consumer sciences education for 36 of the 38 competency

statements in Part I of the student questionnaire. The two competencies on which students in the one-semester-or-less group scored higher than students in the three-semesters-or-more group were questionnaire item 10, *maintain good physical and mental health* and item 20, *evaluate the quality of products, equipment, and services based on consumer information*.

Although in different rank order, students in both groups felt most competent to perform similar life skills. Students' highest mean scores were for the following competencies: *good manners when eating and entertaining; use basic safety, sanitation, and kitchen skills to prepare, serve, and store food; get and keep a job; plan meals, prepare shopping lists, and purchase food; and choose and wear clothes and accessories that enhance self*. Students in both groups felt least prepared to *construct textile products using a sewing machine* and to *choose housing*.

Differences in the attainment of family and consumer sciences competencies between students who had three or more semesters of family and consumer sciences education and those who had one semester or less were analyzed using a single-classification analysis of variance (ANOVA). As shown in Table 9, differences were significant; therefore, the null

Table 8. Students' perceived readiness to perform family and consumer sciences competencies

Competency	One semester or less (n = 135)			Three semesters or more (n = 138)		
	Mean ^a	SD	Rank	Mean	SD	Rank
How ready are you to...						
1. Choose housing?	4.21	1.53	37	4.78	1.54	37
2. Use the elements and principles of design to furnish and decorate a home?	4.27	1.67	36	4.87	1.72	35
3. Choose and use home furnishings, household equipment, and appliances?	5.13	1.50	21	5.65	1.45	16
4. Plan, prioritize, and evaluate the use of resources to manage a home?	4.44	1.46	34	4.82	1.48	36
5. Recognize the social, economic, and psychological factors affecting food choices?	5.15	1.48	20	5.39	1.20	27
6. Select nutritious foods for good health?	5.57	1.39	10.5	5.83	1.14	9
7. Plan meals, prepare shopping lists and purchase food?	5.64	1.37	7	6.16	1.08	4
8. Use basic safety, sanitation, and kitchen skills to prepare, serve, and store food?	5.78	1.39	5	6.38	.91	2
9. Use good manners when eating and entertaining?	6.13	1.06	2	6.47	.85	1
10. Maintain good physical and mental health?	6.07	1.06	3	6.04	.95	6.5
11. Evaluate options to choose health care and services?	4.74	1.32	26	5.25	1.25	31

^a Using a 7-point scale with anchors 1 (not ready at all), 4 (somewhat ready), and 7 (completely ready).

Table 8. (continued)

Competency	One semester or less (n = 135)			Three semesters or more (n = 138)		
	Mean	SD	Rank	Mean	SD	Rank
12. Use strategies to develop a positive self concept?	5.37	1.22	15	5.57	1.05	21
13. Build strong interpersonal relationships with family members and others?	5.61	1.23	9	6.04	1.09	6.5
14. Use short and long term goal-setting and problem-solving skills to guide your life?	5.41	1.31	14	5.70	1.13	13.5
15. Balance work, family, and individual roles?	5.16	1.35	19	5.53	1.23	23
16. Choose appropriate options to deal with sexual harassment and sexual abuse?	5.43	1.49	13	5.80	1.18	10
17. Respect diversity in individual and family lifestyles?	5.73	1.25	6	5.96	1.07	8
18. Evaluate forces which impact the individual and family?	5.27	1.14	18	5.66	1.03	15
19. Practice rights and responsibilities as a consumer?	5.34	1.25	16	5.62	1.10	18
20. Evaluate the quality of products, equipment, and services based on consumer information?	5.45	1.21	12	5.43	1.16	26
21. Make financial decisions based on goals, income, expenses, and savings?	5.30	1.33	17	5.59	1.27	20
22. Recognize the social, economic, and psychological factors which affect clothing choices?	5.57	1.38	10.5	5.74	1.27	12

Table 8. (continued)

Competency	One semester or less (n = 135)			Three semesters or more (n = 138)		
	Mean	SD	Rank	Mean	SD	Rank
23. Choose and wear clothes and accessories that enhance self?	5.90	1.27	4	6.05	1.15	5
24. Care for and alter clothing?	4.61	1.82	32	5.36	1.56	28
25. Construct textile products using a sewing machine?	3.03	1.97	38	4.35	1.88	38
26. Describe the human reproductive process and family planning methods?	4.90	1.62	23	5.62	1.25	18
27. Provide appropriate health care to meet the needs of the mother, child, and other family members during prenatal and postnatal development?	4.36	1.72	35	5.46	1.44	25
28. Guide the physical, social, emotional, and intellectual development of children?	4.70	1.77	29	5.55	1.43	22
29. Provide a safe environment for a child by selecting age and developmentally appropriate toys, equipment, food, and materials?	4.98	1.73	22	5.70	1.31	13.5
30. Choose appropriate child care?	4.79	1.76	24.5	5.62	1.34	18
31. Provide appropriate health care, including immunizations, for children?	4.64	1.76	31	5.51	1.37	24
32. Make decisions about readiness to assume parenting responsibilities?	4.49	1.94	33	5.21	1.57	33

Table 8. (continued)

Competency	One semester or less (n = 135)			Three semesters or more (n = 138)		
	Mean ^a	SD	Rank	Mean	SD	Rank
33. Identify career opportunities related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	4.79	1.33	24.5	5.28	1.13	29
34. Locate and use resources related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	4.73	1.25	27.5	5.27	1.26	30
35. Identify the impact of technology on housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	4.73	1.39	27.5	5.19	1.24	34
36. Be a leader?	5.63	1.33	8	5.75	1.19	11
37. Get and keep a job?	6.17	1.01	1	6.34	.91	3
38. Identify small businesses that use family and consumer sciences education skills?	4.68	1.43	30	5.22	1.36	32
Total Mean and SD	5.11	.82		5.57	.79	

hypothesis is rejected and the research hypothesis is accepted. The more family and consumer sciences instruction students had, the more competent they perceived themselves to be in performing the minimum program competencies required in family and consumer sciences programs in Iowa. This finding

Table 9. Analysis of variance (ANOVA) of students' perceived competence

		Sum of Squares	df	Mean Square	F Ratio
Total Mean Score	Between Groups	13.760	1	13.760	24.166**
	Within Groups	151.459	266	.569	

** $p < .01$.

was consistent with results found in research conducted with similar subjects in Illinois and Indiana. Winsor, Cote, and Griswold (1990) found that students in Illinois who had been enrolled in two or more family and consumer sciences courses perceived themselves to be significantly more competent in family and consumer sciences concepts than did students who had no more than one family and consumer sciences class. In a five-year longitudinal study in Indiana, graduating seniors who had two or more family and consumer sciences classes had mean scores significantly higher than students without instruction (Fox & Van Buren, 1994, 1995). In Illinois,

Indiana, and Iowa, those students with more family and consumer sciences education felt more competent about their abilities to perform the life skills assessed than did students with less family and consumer sciences instruction.

It was interesting to note that students in Iowa who had three semesters or more of family and consumer sciences ranked lower in their graduating class, worked longer hours, and came from families with lower incomes than their peers who had one semester or less of family and consumer sciences instruction. Yet, the total mean scores of these students were significantly higher than their more affluent, academically-gifted classmates who worked fewer hours.

To assist in the decision-making process regarding revalidation of the minimum program competencies for family and consumer sciences programs in Iowa, further analysis of differences between the comparison groups was conducted for each of the 38 competencies and eight content areas using one-tailed *t*-tests. However, the risk of committing a Type I error—that of rejecting a true null hypothesis—increases as the number of *t*-tests increases (Gall, Borg, & Gall, 1996; Hinkle, Wiersma, & Jurs, 1994). The researcher “can reduce this risk by setting the probability level low (e.g., $p = .01$)” (Gall, Borg, & Gall, 1996, p. 390-391). In addition, if a directional hypothesis has been proposed for the variables

being tested, use of multiple t -tests is much less of a problem. "If an obtained, statistically significant result confirms a prediction, the alternative explanation that it was a chance result has low plausibility" (p. 391).

An even more conservative technique to control the Type I error rate is the Bonferroni method (Bowerman & O'Connell, 1990) in which the probability level is set by dividing alpha by the number of t tests to be performed. Because results of this study may be used by decision-makers to revise family and consumer sciences minimum program competencies in Iowa, the Bonferroni method was used to determine the level at which the null hypothesis would be rejected in each one-tailed t -test calculated such that all 38 tests collectively have a 95% level of confidence. A two-tailed t -test with $\alpha = .05$ would have a significance level of $p = .0013$ if 38 different t -tests were calculated ($.05/38$). Because the statistical software used for analysis, SPSS for Windows Version 7.0, only calculates significance to three digits, $p = .001$ was the level of significance used to test the difference in means of each competency between students who had three semesters or more of family and consumer sciences and those who had one semester or less of instruction. Using the same procedure, a significance level of $p = .006$ ($.05/8$) was calculated and used

for testing mean differences of each of the eight content areas between the two student groups.

Use of the Bonferroni method inevitably lowered the number of significant differences found between student groups for both competencies and content areas when compared to results using the more traditional t -test with $p = .05$ found in the family and consumer sciences literature. However, the need for a controlled Type I error rate to increase the accuracy of findings was deemed more important than the number of significant differences found. In addition, because analysis of variance (ANOVA) assumes homogeneity of variance between groups, the t -test was calculated instead of ANOVA. The t -test allowed the variances of groups to be tested on each variable and therefore permitted the more appropriate t -value to be chosen based on whether the assumption of equal variances appeared to be valid. The results of equality of variances findings and t -test results are presented in Table 10 for each program competency and in Table 11 for each family and consumer sciences content area.

The mean scores for students who had one semester or less of family and consumer sciences were significantly different from those having had three semesters or more for 16 of the 38 competencies assessed. Seven of these competencies were classified in the parenting and child development content

area. Three of the sixteen competencies related to food and nutrition, two were associated with textiles and clothing, one related to housing, and one related to entrepreneurship. The remaining two competencies which showed significant differences between the student comparison groups focused on identifying career opportunities and locating and using resources in each of the family and consumer sciences content areas.

Six of the eight family and consumer sciences content areas assessed—housing and home management; food and nutrition; individual and family health; personal and family living; consumer education and resource management; textiles and clothing; child development and parenting; and leadership, job getting and job keeping, and entrepreneurship—showed significant differences in the means between students in the one-semester-or-less group and those in the three-semesters-or-more group. Only two content areas, individual and family health and consumer education and resource management, showed no significant differences. The smaller number of competencies (two and three respectively) listed in the student questionnaire for these two areas may have contributed to these results. Each of the other content areas had four or more competencies included in the questionnaire.

Table 10. Levene's test and t-test data for minimum program competencies

Competency	Assumption of Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
How ready are you to...						
1. Choose housing?	Equal	.000	.997	3.103	271	.001**
2. Use the elements and principles of design to furnish and decorate a home?	Equal	.122	.727	2.899	271	.002
3. Choose and use home furnishings, household equipment, and appliances?	Equal	.500	.480	2.951	271	.002
4. Plan, prioritize, and evaluate the use of resources to manage a home?	Equal	.004	.947	2.145	271	.017
5. Recognize the social, economic, and psychological factors affecting food choices?	Equal	3.257	.072	1.494	271	.068
6. Select nutritious foods for good health?	Unequal	6.923	.009	1.712	258	.044
7. Plan meals, prepare shopping lists, and purchase food?	Unequal	14.148	.000	3.444	253	.001**
8. Use basic safety, sanitation, and kitchen skills to prepare, serve, and store food?	Unequal	22.767	.000	4.256	229	.000**
9. Use good manners when eating and entertaining?	Unequal	3.921	.049	2.965	255	.002

**Using the Bonferroni method, $p \leq .001$.

Table 10. (continued)

Competency	Assumption of Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
10. Maintain good physical and mental health?	Equal	2.273	.133	.312	271	.378
11. Evaluate options to choose health care and services?	Equal	.407	.524	3.258	271	.001**
12. Use strategies to develop a positive self concept?	Unequal	5.522	.019	1.386	261	.083
13. Build strong interpersonal relationships with family members and others?	Unequal	6.667	.010	3.048	265	.002
14. Use short and long term goal-setting and problem-solving skills to guide your life?	Unequal	6.832	.009	1.998	263	.024
15. Balance work, family and individual roles?	Equal	1.057	.305	2.388	271	.009
16. Choose appropriate options to deal with sexual harassment and sexual abuse?	Unequal	9.851	.002	2.320	253	.011
17. Respect diversity in individual and family lifestyles?	Unequal	3.825	.052	1.583	262	.058

Table 10. (continued)

Competency	Assumption of variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
18. Evaluate forces which impact the individual and family?	Equal	1.686	.195	2.930	271	.002
19. Practice rights and responsibility as a consumer?	Equal	3.078	.080	1.933	271	.027
20. Evaluate the quality of products, equipment, and services based on consumer information?	Equal	.469	.494	.119	271	.453
21. Make financial decisions based on goals, income, expenses, and savings?	Equal	.000	.996	1.800	271	.037
22. Recognize the social, economic, and psychological factors which affect clothing choices?	Equal	1.274	.260	1.066	270	.144
23. Choose and wear clothes and accessories that enhance self?	Equal	1.255	.264	1.004	271	.158
24. Care for and alter clothing?	Unequal	6.773	.010	3.634	262	.000**
25. Construct textile products using a sewing machines?	Equal	.682	.409	5.660	271	.000**

Table 10. (continued)

Competency	Assumption of Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
26. Describe the human reproductive process and family planning methods?	Unequal	5.214	.023	4.140	251	.000**
27. Provide appropriate health care to meet the needs of the mother, child, and other family members during prenatal and postnatal development?	Unequal	4.278	.040	5.734	260	.000**
28. Guide the physical, social, emotional, and intellectual development of children?	Unequal	6.332	.012	4.320	256	.000**
29. Provide a safe environment for a child by selecting age and developmentally appropriate toys, equipment, food, and materials?	Unequal	8.812	.003	3.893	249	.000**
30. Choose appropriate child care?	Unequal	9.580	.002	4.336	250	.000**
31. Provide appropriate health care, including immunizations, for children?	Unequal	10.088	.002	4.599	253	.000**

Table 10. (continued)

Competency	Assumption of Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
32. Make decisions about readiness to assume parenting responsibilities?	Unequal	9.701	.002	3.351	255	.001**
33. Identify career opportunities related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	Equal	1.931	.166	3.330	271	.001**
34. Locate and use resources related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	Equal	.061	.805	3.556	271	.000**

Table 10. (continued)

Competency	Assumption of Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
35. Identify the impact of technology on housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?	Equal	.488	.486	2.856	271	.003
36. Be a leader?	Equal	1.333	.249	.812	271	.205
37. Get and keep a job?	Equal	1.506	.221	1.464	271	.072
38. Identify small businesses that use family and consumer sciences education skills?	Equal	.065	.799	3.169	271	.001**

Table 11. Levene's test and t-test data for family and consumer sciences content areas

Content Area	Assumption of variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. 1-tailed
Housing and Home Management (4 competencies, #1-4)	Equal	.052	.820	3.410	271	.001**
Food and Nutrition (5 competencies, #5-9)	Unequal	9.078	.003	3.617	247	.000**
Individual and Family Health (2 competencies, #10-11)	Equal	.399	.528	1.993	271	.024
Personal and Family Living (7 competencies, #12-18)	Unequal	6.884	.009	3.115	254	.001**
Consumer Education and Resource Management (3 competencies, #19-21)	Equal	.372	.543	1.530	271	.064
Textiles and Clothing (4 competencies, #22-25)	Equal	3.241	.073	4.243	270	.000**
Child Development and Parenting (7 competencies, #26-32)	Unequal	5.020	.026	5.123	252	.000**
Leadership, Job Getting and Job Keeping, and Entrepreneurship (6 competencies, #33-38)	Equal	.439	.508	3.435	271	.001**

**Using the Bonferroni method, $p \leq .001$.

Relationships Between Personal and Demographic Characteristics and Level of Competency Attainment

The potential role of students' personal and demographic characteristics was explored using Pearson product-moment correlations and multiple regression techniques. Pearson product-moment correlations revealed significant positive correlations between students' total mean scores and the number of semesters of family and consumer sciences education they had completed in grades 9-12 ($r = .28, p < .05$), the number of sources of information they used ($r = .18, p < .05$), and gender ($r = .13, p < .05$). When these variables were used to construct a stepwise multiple regression equation, gender was eliminated from the model. The remaining variables—number of semesters of high school family and consumer sciences, and number of sources of information—were significant, but together accounted for only 11% of the common variance between these variables and students' total mean scores (Table 12). Therefore, additional factors not considered in this research accounted for 89% of the variance in students' scores.

Reasons for Enrolling and Not Enrolling in Family and Consumer Sciences Courses

The one-semester-or-less group of students in this study was composed of students who had no family and consumer sciences classes and of those who had one semester or less of

Table 12. Stepwise multiple regression data for variables affecting students' perceived competence

Variable	B	β	R	Change in R	R ²
Constant	4.627				
Number of semesters of instruction in grades 9-12	.127	.269	.282	.282	.079
Number of information sources	.051	.161	.325	.043	.105

instruction. Of the 67 students in the sample who had no family and consumer sciences instruction, the top two reasons for not enrolling were *lack of interest* (61%) and *class conflicts* (60%). The next most frequent factors, but clearly less important based on percentage of responses, were *college entrance requirement conflicts* (20%) and *no friends in family and consumer sciences* (19%). Based on frequency of responses, students in this category indicated the factors least affecting their decisions to not enroll were: (1) *family and consumer sciences students are different*, (2) *didn't like the family and consumer sciences teacher*, and (3) *guidance counselor advised against it*. Although these findings suggest students did not appear to have a negative perception of

family and consumer sciences, their lack of interest in the subject matter clearly indicated that they do not perceive family and consumer sciences education as a course to meet their needs, concerns, or interests. Increased program visibility and special efforts to introduce students to the unique content of family and consumer sciences courses as necessary for all persons who plan to be successful in managing the career-and-family interface is needed to attract these students. In addition, working with principals, guidance counselors, or other individuals responsible for class scheduling decisions might be helpful in reducing conflicts. Targeting groups of students such as honor society members, sports teams, service clubs, or cheerleaders might also be effective in addressing the no-friends-in-family-and-consumer-sciences reason for not enrolling.

Sixty-six students with one semester or less of family and consumer sciences education and 132 students with three semesters or more of instruction reported similar reasons for enrolling (Table 13). Whether or not students had one semester or less or three semesters or more of family and consumer sciences education, four of their top five reasons for enrolling were the same. This indicates that similar factors may affect students' decisions to enroll in family

Table 13. Reasons for enrolling in family and consumer sciences classes

Reason	One semester or less (n=66) %	Three semesters or more (n=132) %
Learn useful skills	71.2	90.2
Fit class schedule	63.6	----
Like the teacher(s)	59.1	79.5
Want the class	57.6	86.4
Feel comfortable in class	56.1	80.2
Want the labs and projects	----	72.0

and consumer sciences whether they enroll for one, two, three, or more classes. Letting non-enrolled students know these factors which attract their peers to family and consumer sciences might influence them to enroll as well.

Based on frequency of responses, factors least influential in affecting students' enrollment decisions were also similar for both groups. Each group ranked parents insisted as the factor least affecting their decision. Although ranked in a different order by students who had one semester or less and those who had three semesters or more, the following four factors were reported by both groups as

being next in order of least influence: *plan a post-secondary family and consumer sciences education, no class fees, helpful in my job, and guidance counselor included it in my class schedule.* These findings somewhat dispute the claim that guidance counselors and parents negatively affect students' enrollment in family and consumer sciences programs.

Summary

An overview of the major findings of this study follows. Students who had three or more semesters of family and consumer sciences instruction perceived themselves to be more competent in performing the minimum program competencies required in family and consumer sciences programs in Iowa than did students with one semester or less of instruction. Two variables—the number of semesters of family and consumer sciences students had taken and the number of sources of information they used—accounted for 11% of the common variance between these variables and students' total mean scores. Students who had three semesters or more of family and consumer sciences education ranked lower academically, worked longer hours, and lived in households with lower incomes than did their peers who had one semester or less of family and consumer sciences instruction. Students in the three-semesters-or-more group were twice as likely to be members of

FHA or HERO than were students in the one-semester-or-less group.

The reasons most frequently reported by students for enrolling in family and consumer sciences were: *to learn useful skills, wanted family and consumer sciences classes, liked the family and consumer sciences teacher(s), felt comfortable in class, and fit my class schedule.* The reasons most frequently reported for not enrolling were: *lack of interest, class conflicts, college entrance requirement conflicts, and no friends in family and consumer sciences.* Students in this study used books, magazines, television, newspapers, and video tapes most often as sources of information. The Internet and computer software were used less often.

Data from this study contributes one measure of the effectiveness of family and consumer sciences instruction in Iowa and provides information for use in revalidating the program's minimum competencies. Through strengthening family and consumer sciences programs, students will be empowered to become more fully functioning family members as well as more productive members of society. Further, results contribute Iowa data for use in meeting the federal mandate for vocational education program assessment legislated by the Carl D. Perkins Vocational and Applied Technology Education Act

Amendments of 1990. This study also contributes new data to the knowledge base of program evaluation for the family and consumer sciences field. Research results can provide a rationale for recommendations for designing secondary school family and consumer sciences curriculum in Iowa and nationwide for the 21st century.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Systematic evaluations of publicly-funded secondary school family and consumer sciences education can improve program delivery and maximize the development of competencies needed to live in our complex society. Few measures of the effectiveness of such programs now exist. This study was designed to provide one measure of the effectiveness of Iowa secondary school family and consumer sciences programs in delivering minimum learner competencies as perceived by students. The primary goal of the study was to contrast the self-perceived level of competence of family and consumer sciences students who were graduating seniors and had three or more semesters of family and consumer sciences education with the self-perceived level of competence of students at the same level who had one semester or less of family and consumer sciences instruction.

Additional objectives of the study were to:

1. describe and compare the personal and demographic characteristics—gender, ethnic origin, size of graduating class, academic rank, marital status, number of children, household income, employment status, family structure, membership in organizations, kind and amount of family and

consumer sciences instruction, and preferred sources of information-of students in each of the two groups

2. determine the effect of students' personal and demographic characteristics on competency attainment

3. identify students' reasons for enrolling or not enrolling in family and consumer sciences courses

4. based on the research findings, identify strengths of family and consumer sciences programs in Iowa and make recommendations for the revalidation of minimum program competencies.

The population for this study consisted of 34,565 high school seniors in 407 schools in Iowa which offered family and consumer sciences programs during the 1995-96 school year according to information supplied by the Iowa Department of Education. A two-stage stratified random sampling procedure was used in the study. In phase one, a random sample of 152 (37%) schools, stratified by the 15 geographical areas in Iowa, was selected by the researcher.

A family and consumer sciences teacher in each selected school was asked to randomly select four students from the 1995-96 graduating class-two (preferably one male and one female) who had three or more semesters of family and consumer sciences and two (preferably one male and one female) who had

one semester or less of family and consumer sciences instruction.

A student questionnaire, *How Ready For Life Are You?*, was developed, reviewed by content experts, pilot tested with teachers and students not in the final sample, revised based on pilot test results, and used to collect data for the study. Part I of the instrument included 38 abridged competency statements designed to measure students' level of attainment of the 122 minimum competencies mandated for secondary school family and consumer sciences programs in Iowa. Part II was designed to collect data regarding students' personal and demographic characteristics and to identify students' reasons for enrolling or not enrolling in family and consumer sciences courses. The cooperating family and consumer sciences teacher in each selected school administered the survey to each of the students she selected. Techniques used to increase the student response rate included a letter addressed to students selected to participate in the study, a reminder postcard to all teachers one week after questionnaires were mailed, and a second postcard to nonresponding teachers ten days after the first. A second letter and complete set of data collection materials were sent to all nonrespondent teachers one month after the first mailing. Follow-up phone calls were made to nonrespondent teachers the third week of May and a final

handwritten personal note was sent to all non-respondent teachers June 1.

Data were returned by teachers from 98 (68%) schools for 360 (62.5%) students. Usable data from 273 (47%) students were coded and analyzed using the statistical software SPSS for Windows Version 7.0. Data were analyzed using descriptive and inferential statistics including t-tests, analysis of variance, Pearson product moment correlations, and multiple regression techniques. Research findings are summarized below.

Personal and demographic characteristics

The student sample was composed of 44% males and 56% females. Nearly twice as many females (91) as males (47) comprised the group of students with three semesters or more of family and consumer sciences education. A more balanced gender ratio existed between students comprising the one-semester-or-less comparison group (72 males and 63 females). Of the 270 students reporting racial background, 93% were Caucasian and 7% were non-Caucasian. The two student groups were similar in racial representation.

Almost three-fourths of the students in the sample were from schools with a graduating class of fewer than 100 students. Only minor differences existed between comparison groups in the size of graduating classes. Forty-five (35%)

students in the one-semester-or-less group reported themselves ranked in the top quartile of their graduating class while only 31 (23%) of the three-semesters-or-more group did so. Both groups had similar numbers of students in the bottom quartile, 11 in the one-semester-or-less group and 13 in the three-semesters-or-more group.

More than three-fourths of all students in the sample worked for pay. An equal percentage (32%) of students in each comparison group worked fewer than 20 hours per week. However, more students (47%) who had three semesters or more of family and consumer sciences worked 20 or more hours per week than did students (42%) who had one semester or less of instruction. More students (48%) in the three-semesters-or-more group reported living in families with incomes of \$29,999 or less whereas 70% of students in the one-semester-or-less comparison group reported living in families with incomes of \$30,000 or more.

The vast majority of students in both comparison groups were single (95%) and had no children (96%). Most students (68%) lived with two parents. A greater percentage of students in the three-semesters-or-more group lived in single parent (20%) and blended (13%) households than did students in the one-semester-or-less comparison group (16% and 6% respectively).

In regard to the three most-frequently marked organizations in which they held memberships, involvement was similar for both groups of students; membership in an athletic organization, church-related youth group, or school service club ranked first, second, and third respectively. However, students who had three semesters or more of family and consumer sciences education were twice as likely to be members of Future Homemakers of America (FHA) or HERO (Home Economics Related Occupations), family and consumer sciences student organizations, than were students with one semester or less of instruction.

From a list of 11 common sources of information, students in both groups used the same top five sources, although ranked in a different order. Students with one semester or less of family and consumer sciences education ranked television, magazines, newspapers, books, and video tapes as their top five sources for information. Books, magazines, television, video tapes, and newspapers were the top choices, respectively, for students who had three or more semesters of family and consumer sciences instruction. The Internet and computer software were among the least-used information sources by both groups.

Level of competency attainment

Students who had three or more semesters of family and consumer sciences education had mean scores higher than students who had one semester or less of family and consumer sciences instruction for 36 of the 38 competency statements in Part I of the student questionnaire. Students in both groups felt most competent and least competent to perform similar life skills. Students with more family and consumer sciences education felt most competent to: (1) *use good manners when eating and entertaining* (mean=6.47); (2) *use basic safety, sanitation, and kitchen skills to prepare, serve, and store food* (mean=6.38); and (3) *get and keep a job* (mean=6.34). Students with one semester or less of family and consumer sciences education felt most competent to: (1) *get and keep a job* (mean=6.17); (2) *use good manners when eating and entertaining* (mean=6.13); and (3) *maintain good physical and mental health* (mean=6.07). Students in both groups felt least prepared to *construct textile products using a sewing machine* and to *choose housing*.

Differences in the attainment of family and consumer sciences competencies between students who had three or more semesters of family and consumer sciences education (mean=5.57) and those who had one semester or less (mean=5.11)

were analyzed using a single-classification analysis of variance (ANOVA). Differences were significant, $F(1, 266) = 24.166$, $p < .01$, indicating that students who had three or more semesters of family and consumer sciences perceived themselves to be significantly more prepared to perform the family and consumer sciences competencies tested than did those students who had one semester or less of instruction.

Relationships between personal and demographic characteristics and competency attainment

The potential role of students' personal and demographic characteristics on attainment of competencies was explored using Pearson product-moment correlations and multiple regression techniques. Pearson product-moment correlations revealed significant positive correlations between students' total mean scores and the number of semesters of family and consumer sciences education they had completed in grades 9-12 ($r = .28$, $p < .05$), the number of sources of information they used ($r = .18$, $p < .05$), and gender ($r = .13$, $p < .05$). When these variables were used to construct a stepwise multiple regression equation, gender was eliminated from the model. The remaining variables—number of semesters of high school family and consumer sciences and number of sources of information—were significant, but together accounted for only 11% of the common variance for students' total mean scores.

Therefore, additional factors not considered in this research may account for 89% of the variance in students' scores.

Reasons for enrolling or not enrolling in family and consumer sciences classes

Of the 67 students in the sample who had no family and consumer sciences instruction, the top two reasons for not enrolling were lack of interest (61%) and class conflicts (60%). These factors were followed by college entrance requirement conflicts (20%) and no friends in family and consumer sciences (19%). Sixty-six students with one semester or less of family and consumer sciences education and 132 students with three semesters or more reported similar reasons for enrolling in family and consumer sciences classes. Four of their top five reasons for enrolling were the same. The number one reason for enrolling for both groups of students was *to learn useful skills*. This was followed by *fit class schedule, liked the family and consumer sciences teacher(s), wanted family and consumer sciences, and felt comfortable in the class* for students with one semester or less of instruction. Students with three semesters or more indicated they *wanted family and consumer sciences, felt comfortable in the class, liked the teacher(s), and wanted the labs and projects offered*.

Conclusions

Although relationships can be identified in causal-comparative research, cause and effect cannot be proven (Fraenkel & Wallen, 1993). Therefore, "the results of causal-comparative studies should always be interpreted with caution" (p. 338). The findings of this study provide support for the following conclusions.

Using total mean scores as the measurement criteria, students with more family and consumer sciences instruction perceived themselves to be more competent in performing the minimum program competencies required in family and consumer sciences programs in Iowa than did students with one semester or less of instruction. Family and consumer sciences programs in Iowa are effective in increasing the perceived competence level of students who enroll in three or more semesters of instruction. Consequently, the state-mandated, competency-based approach to family and consumer sciences education in Iowa appears successful.

Regardless of whether students had three or more semesters or one semester or less of family and consumer sciences, they felt most competent to perform life skills related to food and nutrition; personal and family living; and individual and family health. Students felt least competent to perform life skills related to housing and home management.

Concentrated study during grades 7 through 12 in five of the seven family and consumer sciences content areas evaluated had a positive affect on students' perceived ability to perform competencies related to those content areas. The exceptions were individual and family health and consumer education and resource management.

Significant differences in gender and academic rank were found between students in the three-semester-or-more group and those in the one-semester-or-less group. These findings suggest that Iowa's secondary school family and consumer sciences programs continue to perpetuate the traditional and stereotypical beliefs that family and consumer sciences programs are more appropriate for females and lower-achieving students than for males and higher-achieving students. Such beliefs segment students, maintain the status quo, and do not support equity goals in our society. Further, students who had three semesters or more of family and consumer sciences education worked longer hours and lived in families with lower incomes than did their peers who had one semester or less of instruction. These findings offer evidence that family and consumer sciences programs in Iowa are also segmented by socioeconomic levels. However, in spite of clear differences between student profiles in each comparison group, the socioeconomic status, academic rank, and gender of students in

the three-semester-or-more group did not affect their perceived ability to perform the competencies assessed.

Because students with three or more semesters of family and consumer sciences had a higher rate of membership in FHA and HERO, one can conclude that the longer that students were involved in family and consumer sciences education the more likely they were to become members of FHA or HERO. Because FHA is the national and state family and consumer sciences student leadership development organization and because programs serve many students only once, membership ought to be a priority.

Although two personal and demographic characteristics of students were significant predictors of students' mean scores, these variables accounted for only 11% of the variance found. Therefore, other variables not considered in this research may account for 89% of the variance in students' scores. Besides the number of semesters of family and consumer sciences students had in high school and the number of sources of information they used, other factors contributed to students' perceived competency.

Recommendations

Recommendations for secondary school family and consumer sciences programs have traditionally come from federal

legislation and national standards; vision, mission, and goal statements adopted by administrators and practitioners in the field; conceptual frameworks proposed by family and consumer sciences scholars and professional organizations; and guidebooks which outlined curriculum development alternatives (Redick, 1995). Today, more and more states build their family and consumer sciences programs on state mandates and local needs assessments. Research which addresses the unique characteristics and circumstances surrounding programs in a particular state can be a valuable source of information for program decision-makers. This study provides student data specific to Iowa and findings support the following program and future research recommendations.

Program recommendations

Results from this research should be used in the decision-making process regarding the revalidation of minimum program competencies for family and consumer sciences programs in Iowa. Data from this study provide decision-makers with one tangible, quantitative measure of the effectiveness of secondary school family and consumer sciences programs in Iowa as perceived by students. These data provide the foundation for continued, as well as increased, support and funding for programs. The development of human capital through enrollment in family and consumer sciences programs is a wise investment

which can contribute to an improved quality of individual, family, and community life and be a means to economic development for Iowa.

Although students who had three semesters or more of family and consumer sciences rated their perceived competence on 37 of the 38 competencies above the midpoint on a 7-point scale, family and consumer sciences programs in Iowa can be improved by examining those competencies students felt most and least prepared to perform. Program decision-makers should speculate on reasons for students' perceived competence levels to determine whether curriculum changes are warranted. For example, although students' mean scores indicated they were least prepared to *construct textile products using a sewing machine*, the researcher would not consider that to be a program weakness because deliberate efforts have been made in the family and consumer sciences field to shift the emphasis of clothing and textile competencies away from such technical, production-oriented tasks.

Similar efforts have also been directed toward competencies in the food and nutrition area with different results. Although students had high mean scores for competencies in this area, such a finding may not be a program strength. For example, students felt more confident to *use good manners when eating and entertaining; use basic safety,*

sanitation, and kitchen skills to prepare, serve, and store food; and plan meals, prepare shopping lists, and purchase food than they did to *select nutritious foods for good health*. These results suggest Iowa programs have been less successful in creating change in the food and nutrition content area than in clothing and textiles.

Rather than making curricular changes based solely on the results of this study, decision-makers should compare these findings with others. One parallel study to consider is being conducted with the teachers of the students in this study (M. A. Good, personal correspondence, March 24, 1997). Results could be analyzed to determine if correlations exist between students' perceived level of competency attainment and teachers' perceptions of the importance of the competencies to their programs as well as the extent to which they teach the minimum program competencies.

Because up-to-date student and teacher data specific to Iowa is now available, program decision-makers also have the opportunity to examine whether the existing family and consumer sciences competencies are the "right" priorities. As programs prepare students for the 21st century, the focus of instruction should be analyzed to determine what views and philosophical orientations of family and consumer sciences are currently being emphasized by Iowa programs. Although many

sources of information for use in this analysis exist, the following are recommended as a place to begin.

Four historical and two emerging views of family and consumer sciences and their implications for curriculum are offered for consideration by Thomas (1986). Baldwin (1985, 1991) critiques three models of family and consumer sciences curriculum and advocates for a critical theory approach to the field. Peterat and Vaines (1992) outline four questions professionals in the field are challenged to answer as they explore ways to transform practice in family and consumer sciences. The implications for practice as a result of societal change is the focus of a thought-provoking article by Berenbaum (1992). Redick (1995) provides an excellent summary of the major influences on today's thinking about family and consumer sciences curriculum. A redefinition of the focus of secondary school family and consumer sciences programs is proposed by Erwin, Moran, and McInnis (1996). They recommend that "secondary programs concentrate efforts towards general career and life-skill preparation with the recognition that what is defined as 'essential' life skills will be ever-changing in an evolving society" (p. 23).

Besides informing decision-makers of the benefits of family and consumer sciences programs, promotion efforts should be directed specifically to under-represented groups.

For instance, male students, the academically gifted, the socioeconomically advantaged, and the parents of these students should be targeted if increased enrollments are to be realized. In addition, special efforts to showcase the unique content of family and consumer sciences and promote its benefits for all students as part of their general education should be planned and implemented.

Beyond publishing findings of this research in professional journals, increased program visibility through popular press articles, public service announcements, news releases, and school, community, and state department of education publications is recommended. Promotion of this type could counter widespread perceptions that family and consumer sciences courses do not provide skills needed by all students. Further, working with principals, guidance counselors, or other individuals responsible for local class scheduling decisions might also be helpful in reducing conflicts as a reported reason for not enrolling in family and consumer sciences classes.

Future research recommendations

This same study should be replicated in Iowa using improved directions for selecting and verifying the student sample to increase usable data responses and a revised student questionnaire to improve the quality of data received. Family

and consumer sciences teachers who cooperated in this study were diligent in selecting both male and female students to participate in providing data. However, the selection of students in groups of one semester or less of instruction and three semesters or more was less than satisfactory and resulted in the elimination of 87 students from the data set. Valuable student data were lost as a result of these sampling errors. In future studies of this kind, the researcher would design and include a verification checklist for use by teachers in selecting more carefully the student sample.

Additional variables should be identified and investigated as possible factors which contribute to differences in students' personal and demographic profiles and the level of competency attainment by students. Variables recommended include grade point average, family responsibilities, parents' educational level, future life and career expectations, self-esteem, self-motivation, teacher effectiveness, types of learning activities used, philosophical orientation to curriculum development, and other components of the teaching-learning process.

Finally, the longitudinal component of the study should be maintained and emphasized more in any future replications to increase the data base regarding the impact of family and consumer sciences programs on students. Efforts to secure the

names, addresses, and phone numbers of all students in the sample should be an integral part of the data collection procedure, including specific follow-up procedures for contacting teachers who may not provide the requested student information.

To gather more tangible evidence that students can actually perform the competencies assessed, research should be designed to document students' performance of the competencies. Measurement could occur through teacher observations, interviews with students soliciting specific responses to competency-related scenarios, or cognitive tests.

A qualitative research study should be designed to supplement the quantitative data provided by this study. Naturalistic research strategies, such as face-to-face interviews, phone interviews, focus groups, or open-ended questionnaire items, are recommended to investigate more thoroughly the reasons students choose to enroll or not enroll in family and consumer sciences courses and to identify factors contributing to students' perceived level of competency attainment. Such methodologies allow more in-depth responses by students. Consequently, the researcher's opportunity to better understand the attached meaning and develop a more "holistic description of complex phenomena" (Fraenkel and Wallen, 1993, p. 380) is enhanced.

APPENDIX A. HUMAN SUBJECTS APPROVAL FORM

Checklist for Attachments and Time Schedule

The following are attached (please check):

12. ☒ Letter or written statement to subjects indicating clearly:
- a) purpose of the research
 - b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
 - c) an estimate of time needed for participation in the research and the place
 - d) if applicable, location of the research activity
 - e) how you will ensure confidentiality
 - f) in a longitudinal study, note when and how you will contact subjects later
 - g) participation is voluntary; nonparticipation will not affect evaluations of the subject
13. ☐ Consent form (if applicable)
14. ☐ Letter of approval for research from cooperating organizations or institutions (if applicable)
15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact

April 1, 1996

Month / Day / Year

Last Contact

April 30, 1996

Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

May 15, 1996

Month / Day / Year

18. Signature of Departmental Executive Officer Date Department or Administrative Unit

Judy K. Brun

2/9/95

Family & Consumer Sciences Education & Studies

19. Decision of the University Human Subjects Review Committee:

☒

Project Approved

☐ Project Not Approved

☐ No Action Required

Patricia M. Keith

Name of Committee Chairperson

2-27-95

Date

PmKeith

Signature of Committee Chairperson

APPENDIX B. ALERT POSTCARD

Dear Teacher,

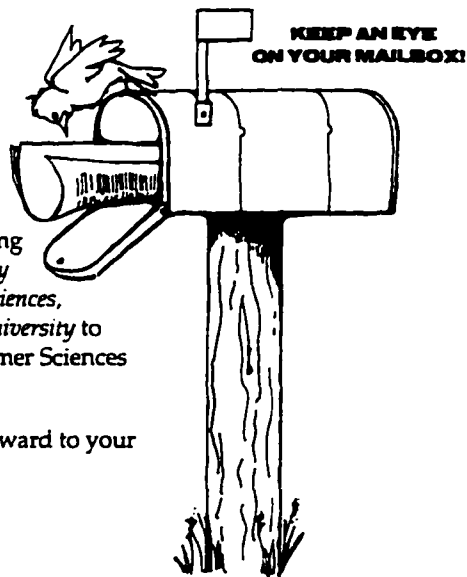
Are you interested in helping decision-makers better understand the importance of Family and Consumer Sciences Education programs? We thought so. As you know, Family and Consumer Sciences Education provides the skills to manage life's complexities, but **evidence of our impact is scarce**. That's why you and your students are being invited to participate in a study *jointly sponsored by the American Association of Family and Consumer Sciences, the Iowa Department of Education, and Iowa State University* to document the effectiveness of Family and Consumer Sciences secondary school programs.

Watch your mailbox for more details. We look forward to your participation.

Sincerely,

Judy K. Brun

Judy K. Brun, Ph.D., C.F.C.S., and others



APPENDIX C. CORRESPONDENCE TO TEACHERS

IOWA STATE UNIVERSITY

OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
 Department of Family and Consumer
 Sciences Education and Studies
 219 Mackay Hall
 Ames, Iowa 50011-1120
 PH 515 294-6444
 FX 515 294-4493
 EM fcseds@iastate.edu

April 8, 1996

«Title» «FirstName» «LastName»
 «Company»
 «Address1»
 «City», «State» «PostalCode»

Dear «Title» «LastName»,

Are you interested in helping decision makers better understand the importance of Family and Consumer Sciences Education programs? We know you are. That's why you are being invited to participate in a study jointly sponsored by the American Association of Family and Consumer Sciences, the Iowa Department of Education, and our department. Our goal is to document the impact of Family and Consumer Sciences programs in secondary schools.

As you know, specific knowledge and skills are required to manage a home and balance our work and family lives. However, some people seem to think these abilities are innate. Fortunately, economist Kenneth Boulding recognizes the fallacy of this kind of thinking. He points out that one of the greatest weaknesses in our social structure is the household decision maker's lack of skill.

Family and Consumer Sciences Education programs provide the kinds of skills needed to manage the complexities of career and family life today. **However, evidence to document our impact on students' preparation for life is scarce. By being involved in this project, you and your students can help provide that evidence. This can not only provide guidance for program designs for the twenty-first century, but also justify the worth of Family and Consumer Sciences Education programs.**

Enclosed you will find a teacher questionnaire and four student questionnaires. The questionnaires will take you and your students approximately 30 minutes to complete. The label on the return envelope is coded for mailing purposes only. The code will be removed as soon as the envelope with your completed materials is returned and checked in. All information will be treated confidentially and all responses will remain anonymous. Data will be summarized and reported as group data only. Individual teacher, school, and student results will not be reported.

Page 2

April 8, 1996

«Title» «LastName»

The tea is for you to enjoy. The pencils are a small token of our thanks to you and your students for your involvement. If you have any questions regarding this study, please contact us by phone, facsimile, or e-mail (mgood@iastate.edu or rtwhite@iastate.edu).

Like you, we are anxious to gather information which can be used to document the importance of Family and Consumer Sciences Education programs. We know your time is very valuable, and we appreciate your willingness to become involved. Your contribution is critical to the success of this project. Results will provide rationale and recommendations for designing secondary school Family and Consumer Sciences Education programs in Iowa and nationwide for the future.

Sincerely,

Judy K. Brun, Ph.D., C.F.C.S.
Professor and Chair

Lou Ann Rounds, M.S.
Iowa Department of Education
Family and Consumer Sciences Consultant

Mary Ann Good, M.S., C.F.C.S.
Research Coordinator

Robin Trimble White, M.S., C.F.C.S.
Research Coordinator

APPENDIX D. DIRECTIONS FOR THE PROJECT

PROJECT DIRECTIONS

To provide the information needed, please proceed as follows:

1. Read the directions on the teacher questionnaire entitled "Teaching Family and Consumer Sciences."
2. Complete the teacher questionnaire by responding to each statement twice.
3. Carefully follow the enclosed directions, entitled "Procedure for Selecting Student Sample", for determining the students who will complete the student questionnaires.
4. Monitor students as they complete the student questionnaire entitled "How Ready For Life Are You?". Answers should be recorded on the enclosed answer sheets using a #2 pencil.
5. Ask students to place their completed answer sheet in the separate envelope provided for student responses. **DO NOT FOLD THE ANSWER SHEETS.** Seal the envelope in the presence of the students.
6. In the self-addressed, postage-paid envelope enclosed, **please return the following materials by APRIL 23:**
 - a. the completed teacher questionnaire,
 - b. the four student answer sheets sealed in the response envelope, and
 - c. the last page only of student questionnaires for those students who volunteer to participate in follow-up research. (Do not return any other part of the student questionnaires.)
 - d. Return the signed permission form if required by your school/district.

APPENDIX E. PROCEDURES FOR SELECTING STUDENTS

PROCEDURE FOR SELECTING STUDENT SAMPLE

Although this process may seem very complicated, we want to reassure you that it isn't as bad as it first appears. We were very concerned about how difficult it might be to follow, but our pilot test proved our apprehensions were unfounded. Teachers in our pilot test sites had no difficulty selecting their sample following these directions. Although the process does take some time, we are confident you won't have any trouble either.

Just to let you know the historical importance of your participation, **no one in Iowa has attempted to do what we are doing in nearly 20 years.** Getting the sample is the hardest part of this kind of research and, as you know, the data collected are only as good as the sample taken. That's why we have to make the sample as random and "clean" as possible within the groups we are comparing. Knowing that you realize the value of what we're trying to document, this is how you need to proceed to select your student sample. **Call us if you need help.**

1. Obtain a list of your school's 1996 graduating seniors from the principal, guidance counselor, or school secretary.
2. **DELETE** from the list any student(s) not appropriate, i.e., foreign exchange, special education, behaviorally disordered.

DO NOT DELETE students because of their academic standing, socio-economic status, attendance record, history of discipline problems, etc.

3. Divide the list by gender.
4. Divide each gender list into two groups, forming four groups:
 - A. Males with three or more semesters of FCS in grades 9-12.
 - B. Males with no FCS or one semester or less of FCS in grades 9-12.
 - C. Females with three or more semesters of FCS in grades 9-12.
 - D. Females with no FCS or one semester or less of FCS in grades 9-12.

Do not include courses reimbursed as Occupational Home Economics.

NOTE: You can make your decisions as to which group students belong in several ways.

Choose **ONE** of the following methods:

- 1) Look at the permanent record of each student.
- 2) If you are in a small school, if you have been there at least four years, and if you are well acquainted with students' schedule histories, you may use your personal knowledge to group students initially. Verify the group placement of those students finally selected through their permanent record.
- 3) Have students self report their group identity. Go into all sections of a class that all seniors are enrolled in. Ask them to write their name on a sheet of paper, list all of the Family and Consumer Sciences courses they have taken in grades 9-12, and the number of semesters of each. For those who have not taken any, they should write none on their paper. Organize papers by gender and then divide each gender into the two groups needed (those who have had one semester only or none and those who have had three or more semesters) by the information provided.

Using the four groups you now have, proceed with step 5.

5. Select five students from each list using the following procedure:

- A. Choose the table of random numbers that matches (or comes closest) to the number of students you have in each of your four groups.
- B. Close your eyes and using your finger, a pencil, or other object, randomly pick a spot on the table. Choose the student whose name falls at that number in group one as student #1. Follow the procedure four more times for that group. If you pick the same name more than once, continue the process until you have five different names.

C. Repeat the procedure in B. for each of your four groups. You should end up with four lists with five names each.

6. Ask student #1 **on each list** to complete a student questionnaire. Students #2 through #5 on each list will be back-up names. If student #1 declines to participate, move to student #2 on that list. Continue until you have one student from each of the following categories:

- A. Male with three or more semesters of FCS in grades 9-12.
- B. Male with no FCS or one semester or less of FCS in grades 9-12.
- C. Female with three or more semesters of FCS in grades 9-12.
- D. Female with no FCS or one semester or less of FCS in grades 9-12.

A total of four students are needed from your school: two students (preferably one male and one female) with no FCS or one semester or less of FCS AND two students (preferably one male and one female) with three or more semesters of FCS.

However, if you have only one male or no males in your school with three or more semesters of FCS in grades 9-12, choose the next female(s) with three or more semesters of FCS in grades 9-12 from your already identified list of #1-5 students in that category.

7. To help assure confidentiality of student responses, please allow each student to put their completed answer sheet in the separate envelope provided for student responses. Students **should not** complete the personal information section of the answer sheet.
8. **Return** the teacher questionnaire, the student answer sheets, and the last page of the student questionnaires of those students who volunteer for the follow-up study **in the postage paid envelope provided by April 23. Do not return the student questionnaires.**
9. Give yourself a pat on the back for a job well done and enjoy a cup of tea on us. This project would not have been possible without your help. Your willingness to be involved is truly appreciated. **THANKS** for the time and effort you have personally contributed.

TABLES OF RANDOM NUMBERS

TABLE I – USE FOR GROUPS WITH 1-10 NAMES

5	2	4	8	10
1	9	6	3	7

TABLE II – USE FOR GROUPS WITH 1-15 NAMES

2	12	14	13	5
3	6	11	15	4
8	1	9	7	10

TABLE III – USE FOR GROUPS WITH 1-25 NAMES

21	16	8	17	23
18	13	14	5	6
2	24	19	15	4
20	11	7	1	12
3	9	25	22	10

TABLE IV – USE FOR GROUPS WITH 1-50 NAMES

36	47	22	18	6	4	17	26	38	5
12	3	1	24	8	39	13	37	29	28
34	30	15	14	7	16	40	2	21	11
43	10	49	31	42	48	25	41	44	20
50	45	32	23	19	35	27	33	46	9

TABLE V USE FOR GROUPS WITH 1-75 NAMES									
67	31	26	27	4	48	37	21	50	69
29	44	58	8	54	75	45	65	41	73
42	40	71	59	6	9	49	56	20	39
57	3	2	74	66	46	60	72	38	25
13	1	33	52	62	12	47	7	51	17
64	28	11	23	43	70	18	19	68	24
5	63	36	16	10	35	15	32	55	53
30	61	22	34	14					
TABLE VI -- USE FOR GROUPS WITH 1-100 NAMES									
45	87	34	74	64	57	73	48	71	84
13	36	38	98	12	6	18	96	55	51
54	85	70	17	59	47	50	30	80	93
24	77	32	7	3	29	83	65	61	76
22	37	43	95	58	69	97	78	79	28
35	67	90	99	62	10	41	75	19	88
33	91	21	89	23	68	60	44	52	92
15	66	26	86	4	14	27	42	53	16
9	72	94	11	46	25	2	49	81	1
56	40	39	5	100	31	8	63	82	20

TABLE VII -- USE FOR GROUPS WITH 1-125 NAMES									
34	96	39	75	55	112	30	76	66	120
116	100	67	17	25	50	47	87	91	3
123	31	113	62	119	61	15	38	94	98
60	32	95	40	58	24	115	64	124	114
2	73	35	104	1	56	14	20	13	103
11	68	90	41	18	45	9	111	59	44
93	85	33	122	42	10	37	69	80	83
46	71	23	48	21	102	49	29	16	52
110	53	74	125	63	51	7	57	92	54
88	77	27	8	84	5	109	22	19	97
72	26	89	36	105	101	81	12	117	106
43	121	82	79	4	65	86	108	78	70
70	99	118	28	107	6				

APPENDIX F. CORRESPONDENCE TO STUDENTS

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 MacKay Hall
Ames, Iowa 50011-1120
515 294-6444
FAX 515 294-4493

April 8, 1996

Dear Student,

Congratulations! You have been selected to participate in a research study to measure the life skills of graduating seniors. This study is being conducted by the Department of Family and Consumer Sciences Education and Studies at Iowa State University in cooperation with the American Association of Family and Consumer Sciences and the Iowa Department of Education.

Your responses are very important. Part I asks you to determine how ready you think you are to perform various life skills. Part II asks you to provide information about yourself. Please read each item carefully. Although the answer sheet has space for ten responses for each item, Part I asks you to respond to questions using a seven point scale. Questions in Part II use a variety of response options. Darken the appropriate circle on the answer sheet based on your answer to each question. It will take you approximately 30 minutes to complete the questionnaire. When you have finished, please return the questionnaire and completed answer sheet to the teacher.

Any information you provide will be kept strictly confidential. No one will be able to connect your responses with you individually. **Do not complete the personal information section of the answer sheet.** Simply begin marking your answers at item number one. Information will be reported as summary data only. If a question seems too personal, you may choose not to answer it. However, all questions asked are critical to the success of this project.

Thank you for working with us. Your time and effort in completing the questionnaire are appreciated. Best wishes to you as you graduate this spring and good luck as you pursue your personal goals.

Sincerely,

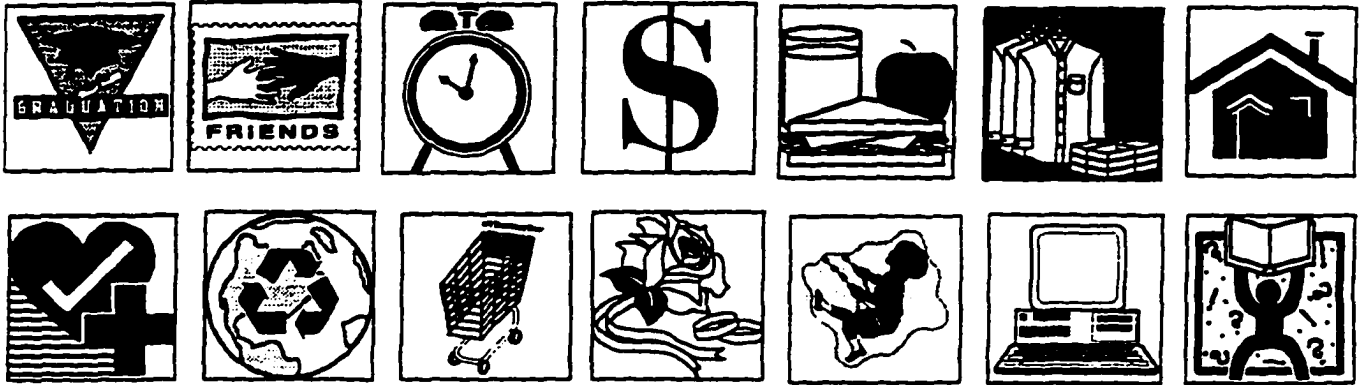
Judy K. Brun, Ph.D., C.F.C.S.
Professor and Chair

Lou Ann Rounds, M.S.
Family and Consumer Sciences Consultant
Iowa Department of Education

Mary Ann Good, M.S., C.F.C.S.
Research Coordinator

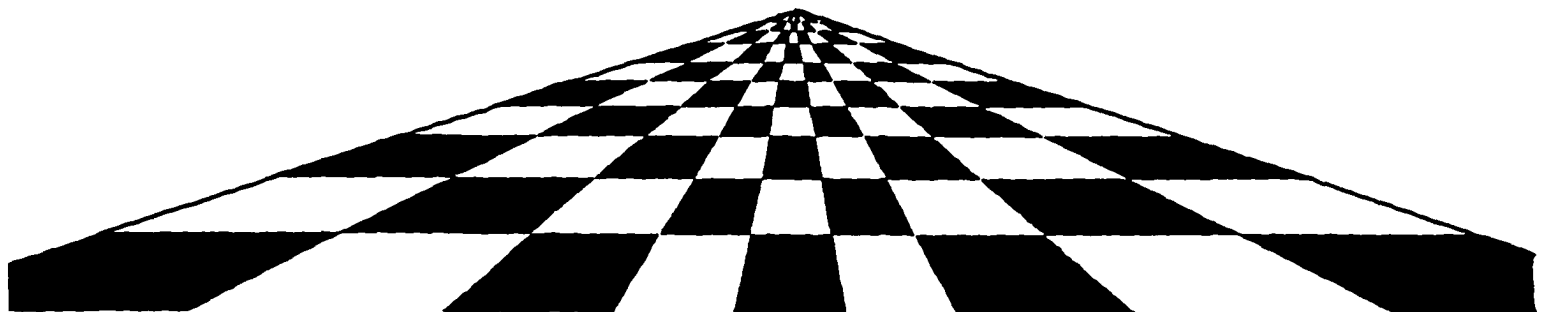
Robin T. White, M.S., C.F.C.S.
Research Coordinator

APPENDIX G. STUDENT QUESTIONNAIRE



Student Questionnaire

**HOW
READY
FOR LIFE
ARE YOU?**



HOW READY FOR LIFE ARE YOU?

PART I. DIRECTIONS: Choose your answer based on **HOW READY YOU THINK YOU ARE** to perform each life skill listed. Use the seven point scale to describe your ability.

HOW READY ARE YOU TO PERFORM THIS LIFE SKILL?

Not ready at all			Somewhat ready			Completely ready
1	2	3	4	5	6	7

Use a No. 2 pencil to darken completely the appropriate circle on the answer sheet.

HOUSING AND HOME MANAGEMENT -- HOW READY ARE YOU TO:

1. Choose housing?
2. Use the elements and principles of design to furnish and decorate a home?
3. Choose and use home furnishings, household equipment, and appliances?
4. Plan, prioritize, and evaluate the use of resources to manage a home?

FOOD AND NUTRITION -- HOW READY ARE YOU TO:

5. Recognize the social, economic, and psychological factors affecting food choices?
6. Select nutritious foods for good health?
7. Plan meals, prepare shopping lists, and purchase food?
8. Use basic safety, sanitation, and kitchen skills to prepare, serve, and store food?
9. Use good manners when eating and entertaining?



Not ready at all				Somewhat ready			Completely ready
1	2	3	4	5	6	7	

INDIVIDUAL AND FAMILY HEALTH -- HOW READY ARE YOU TO:

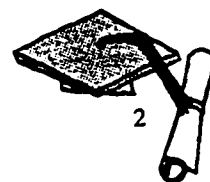
10. Maintain good physical and mental health?
11. Evaluate options to choose health care and services?

PERSONAL AND FAMILY LIVING -- HOW READY ARE YOU TO:

12. Use strategies to develop a positive self concept?
13. Build strong interpersonal relationships with family members and others?
14. Use short and long term goal-setting and problem-solving skills to guide your life?
15. Balance work, family, and individual roles?
16. Choose appropriate options to deal with sexual harassment and sexual abuse?
17. Respect diversity in individual and family lifestyles?
18. Evaluate forces which impact the individual and family?

CONSUMER EDUCATION AND RESOURCE MANAGEMENT -- HOW READY ARE YOU TO:

19. Practice rights and responsibilities as a consumer?
20. Evaluate the quality of products, equipment, and services based on consumer information?
21. Make financial decisions based on goals, income, expenses, and savings?



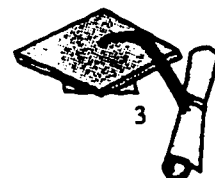
Not ready at all				Somewhat ready			Completely ready
1	2	3	4	5	6	7	

TEXTILES AND CLOTHING -- HOW READY ARE YOU TO:

22. Recognize the social, economic, and psychological factors which affect clothing choices?
23. Choose and wear clothing and accessories that enhance self?
24. Care for and alter clothing?
25. Construct textile products using a sewing machine?

CHILD DEVELOPMENT AND PARENTING -- HOW READY ARE YOU TO:

26. Describe the human reproductive process and family planning methods?
27. Provide appropriate health care to meet the needs of the mother, child, and other family members during prenatal and postnatal development?
28. Guide the physical, social, emotional, and intellectual development of children?
29. Provide a safe environment for a child by selecting age and developmentally appropriate toys, equipment, food, and materials?
30. Choose appropriate child care?
31. Provide appropriate health care, including immunizations, for children?
32. Make decisions about readiness to assume parenting responsibilities?





**LEADERSHIP, JOB GETTING AND JOB KEEPING, AND ENTREPRENEURSHIP --
HOW READY ARE YOU TO:**

33. Identify career opportunities related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?
34. Locate and use resources related to housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?
35. Identify the impact of technology on housing and home management, individual and family health, food and nutrition, textiles and clothing, consumer education, personal and family living, and child development and parenting?
36. Be a leader?
37. Get and keep a job?
38. Identify small businesses that use Family and Consumer Sciences Education skills?



INFORMATION ABOUT YOU

PART II. DIRECTIONS: Use a No. 2 pencil to **darken completely** the appropriate circle on the answer sheet.

39. What is your gender?
- A. Male
 - B. Female
40. What is your ethnic/racial origin?
- A. Caucasian
 - B. African-American
 - C. Hispanic
 - D. Asian
 - E. Other
41. What is the size of your graduating class?
- A. Fewer than 50
 - B. 50-99
 - C. 100-149
 - D. 150-199
 - E. 200-249
 - F. 250 or more
42. What is your rank in your graduating class?
- A. Fourth or top quartile (75th to 100th percentile)
 - B. Third quartile (50th to 74th percentile)
 - C. Second quartile (25th to 49th percentile)
 - D. First or bottom quartile (24th percentile or below)
43. What is your employment status?
- A. Work part time, 20 hours or more per week
 - B. Work part time, less than 20 hours per week
 - C. Am not employed at this time
44. What is your marital status?
- A. Single
 - B. Engaged
 - C. Married
 - D. Divorced
45. How many children do you have?
- A. None
 - B. One
 - C. Two
 - D. Three or more



46. With whom do you currently live?

- A. Both parents, both employed
- B. Both parents, one employed
- C. Mother, employed
- D. Mother, unemployed
- E. Father, employed
- F. Father, unemployed
- G. Blended/step family
- H. A relative other than parents
- I. A non-relative
- J. No one; I live alone

47. What is the income of the household in which you live?

- A. \$10,000-\$19,999
- B. \$20,000-\$29,999
- C. \$30,000-\$39,999
- D. \$40,000-\$49,999
- E. \$50,000 or more
- F. I don't know

Items 48 through 56: Are you or have you been a member of the following organizations? Darken A for YES or B for NO on the answer sheet.

48. FHA (Future Homemakers of America)

49. HERO (Home Economics Related Occupations)

50. 4-H

51. Church-related youth group

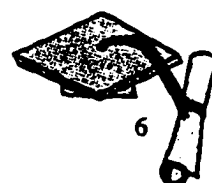
52. Community-related youth group

53. Vocational student organization other than FHA or HERO

54. Honor society

55. Athletic group

56. School service club



Items 57 through 70: Have you taken the following Family and Consumer Sciences courses in grades 7-12? First darken A for YES or B for NO on the answer sheet. Then respond to the question on the right.

57. Housing and Home Management

- A. Yes
- B. No

58. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

59. Food and Nutrition

- A. Yes
- B. No

60. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

61. Individual and Family Health

- A. Yes
- B. No

62. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

63. Personal and Family Living

- A. Yes
- B. No

64. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters



65. Consumer Education and Resource Management

- A. Yes
- B. No

66. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

67. Textiles and Clothing

- A. Yes
- B. No

68. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

69. Child Development and Parenting

- A. Yes
- B. No

70. How long did you study this subject?

- A. I never studied this subject
- B. Less than 6 weeks
- C. 6 - 8 weeks
- D. 9 - 12 weeks
- E. One semester
- F. Two semesters
- G. More than two semesters

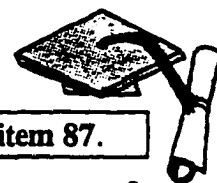
71. How many TOTAL SEMESTERS of Family and Consumer Sciences courses did you take in grades 6, 7, and 8?

- A. I did not take any Family and Consumer Sciences courses in grades 6-8.
- B. Less than one semester
- C. One semester
- D. Two semesters
- E. Three semesters or more

72. How many TOTAL SEMESTERS of Family and Consumer Sciences courses have you taken in grades 9, 10, 11, and 12?

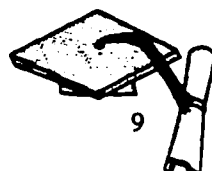
- A. I did not take any Family and Consumer Sciences courses in grades 9-12.
- B. Less than one semester
- C. One semester
- D. Two semesters
- E. Three semesters or more

If you marked B, C, D, or E in item 72, skip items 73-86 and GO DIRECTLY TO item 87.



If you marked A in item 72, complete items 73-86. Darken A on the answer sheet if that statement WAS a reason why you did not enroll in Family and Consumer Sciences courses. Darken B if that statement WAS NOT a reason. Skip items 87-99.

- 73. My friends were not in Family and Consumer Sciences classes.
- 74. I was advised against it by the guidance counselor.
- 75. I did not want to take Family and Consumer Sciences classes.
- 76. Other classes were scheduled during the same time period.
- 77. My job interfered.
- 78. My extra-curricular activities interfered.
- 79. I did not want to participate in the labs and projects required.
- 80. The class fees were too high.
- 81. My parents did not allow me to enroll.
- 82. Students in Family and Consumer Sciences were different than me.
- 83. I did not like the teacher(s).
- 84. The credits did not fulfill a graduation requirement.
- 85. I did not have the necessary prerequisite classes.
- 86. College entrance required courses interfered.

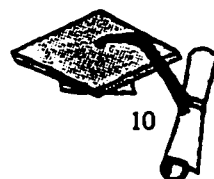


If you marked B, C, D, or E in 72, begin with item 87. Darken A on the answer sheet if that statement WAS a reason why you enrolled in Family and Consumer Sciences courses. Darken B if that statement WAS NOT a reason.

- 87. My friends were in Family and Consumer Sciences classes.
- 88. The guidance counselor included it in my class schedule.
- 89. I wanted to take Family and Consumer Sciences classes.
- 90. It was helpful in my job.
- 91. I wanted to participate in the labs and projects required.
- 92. There were no class fees.
- 93. My parents insisted I enroll.
- 94. I felt comfortable in class.
- 95. I liked the teacher(s).
- 96. The credits fulfilled a graduation requirement.
- 97. The class(es) fit in my class schedule.
- 98. I plan post-secondary education in Family and Consumer Sciences.
- 99. I could learn useful skills and information.

Which of the following sources do you use to get information about life skills? Darken A for YES if you use that source or B for NO if you do not use that source.

- | | |
|--------------------|---------------------------------|
| 100. Books | 106. Seminars/Workshops |
| 101. Magazines | 107. Internet/World Wide Web |
| 102. Newspapers | 108. Computer Software Programs |
| 103. Video tapes | 109. TV |
| 104. Audio tapes | 110. Radio |
| 105. Compact discs | |



THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

PLEASE CONTINUE AS FOLLOWS:

1. Check to be sure you have completely darkened the circles you marked on your answer sheet. Mark again those circles that are not completely filled.
2. If you changed your mind about your response to any question as you completed the questionnaire, check to be sure you completely erased the first answer. Also, erase any other stray marks on the answer sheet. **Check to be sure you have only one response marked for each question.**
2. If you would like to be involved in a follow-up study related to this life skills project, please complete the box below, tear this page from your questionnaire, and return it to the teacher.
3. Return your student questionnaire to the teacher.
4. Place your completed answer sheet in the large envelope available from the teacher. **DO NOT FOLD** the answer sheet.
5. Pat yourself on the back for your willingness to be involved in this project. Without you, this project would not have been possible. **THANKS** again and have a wonderful graduation!

FUTURE OPPORTUNITY TO BE INVOLVED

If you would be willing to participate in a follow-up to this study in 2-5 years, please provide the following information:

Your name _____

Permanent address through which you could be contacted in 2-5 years:

Phone number of parents or someone else who could locate you in 2-5 years: _____

Their name and relationship to you: _____



APPENDIX H. SCHOOL/DISTRICT PERMISSION FORM

(COMPLETE AND RETURN IF REQUIRED BY YOUR SCHOOL OR DISTRICT)

School/District Permission For Students to Participate in ISU Study

Four students from the 1996 graduating class at _____
(name of school)

may complete student questionnaires, entitled "How Ready for Life Are You?",

as part of a Family and Consumer Sciences Education research study

jointly sponsored by the

Iowa Department of Education,

the American Association of Family and Consumer Sciences, and

the Department of Family and Consumer Sciences Education and Studies

at Iowa State University.

Signature & Title of Authorizing Administrator

Date

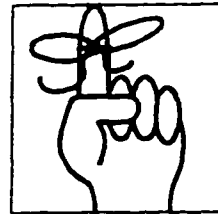
Signature & Title of Participating Family & Consumer Sciences Teacher

Date

APPENDIX I. REMINDER POSTCARD TO ALL TEACHERS

April 19, 1996

One week ago questionnaires were sent to you to be completed by you and four of your graduating seniors. Have you completed them? If so, please accept our sincere thanks. If not, could you please do so today? The questionnaires were sent to only 25% of the secondary school family and consumer sciences teachers in Iowa. Your input is critical!



If you did not receive the questionnaires or have misplaced them please call (515-296-6444), and we will immediately mail you a new packet of materials.

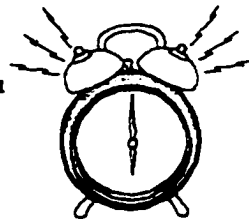
Judy K. Brun Lou Ann Rounds Robin T. White Mary Ann Good
Dept. Chair IA Dept. of Ed. Research Coordinators

**APPENDIX J. FOLLOW-UP POSTCARD TO NONRESPONDING
TEACHERS**

April 29, 1996

Dear Teacher,

As of today, we have not yet received your response and those of your students to the questionnaires mailed to you April 11. Have you mailed them? If so, thank you very much. If not, could you please complete and return them today?



If you are having trouble completing this project, please call us at 515-294-6444. Your participation is vital to the success of this study. Thank you for your time and assistance.

**Time is
running out....**

Judy K. Brun Lou Ann Rounds Mary Ann Good Robin T. White
Dept. Chair IA Dept. of Ed. Research Coordinators

**APPENDIX K. FOLLOW-UP CORRESPONDENCE TO NONRESPONDING
TEACHERS**

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 MacKay Hall
Ames, Iowa 50011-1120
PH 515 294-6444
FX 515 294-4493
EM fcseds@iastate.edu

May 8, 1996

<<Teacher Name>>
<<School>>
<<Address>>
<<City, IA Zip>>

Dear Teacher,

Three weeks ago, questionnaires regarding Iowa's Family and Consumer Sciences secondary school programs were mailed to you. As of today, we have not yet received your completed questionnaire and the responses of four graduating seniors you selected from your school.

Your response is critical if we are to accurately document the impact of Family and Consumer Sciences programs as viewed by you and your students. In the event your original packet has been misplaced, we have enclosed a replacement.

We urge you to complete and return the questionnaires as quickly as possible. No one in Iowa has attempted to conduct this kind of research in nearly 20 years. This is why your response is so important to us.

Your contribution to the joint efforts of the Iowa Department of Education, the American Association of Family and Consumer Sciences, and the Department of Family and Consumer Sciences Education and Studies will be greatly appreciated. Thank you for your time and assistance.

Sincerely,

Judy K. Brun, Ph.D., C.F.C.S.
Professor and Chair

Lou Ann Rounds, M.S.
Iowa Department of Education

Robin T. White, M.S., C.F.C.S.
Research Coordinator

Mary Ann Good, M.S., C.F.C.S.
Research Coordinator

APPENDIX L. PERSONAL NOTE TO NONRESPONDING TEACHERS

Handwritten Personal Follow-up Note

June 1, 1996

Dear <<Teacher>>,

As you close out the school year this week, please remember to drop your FCS research materials in the mail. Even if you were unable to get students to participate, please take a few minutes and complete the teacher survey for us. Your input is important to us. Thanks for your response and have a great summer!

Sincerely,

Robin White

APPENDIX M. THANK-YOU POSTCARD

Dear Teacher and Graduating Seniors,

We have received your questionnaire responses. THANK YOU for participating in this research endeavor. Your involvement provides important information which will be used to document the importance of Family and Consumer Sciences Education programs in Iowa and nationwide.



Your contribution to the success of this study is greatly appreciated.

Judy K. Brun	Lou Ann Rounds	Mary Ann Good	Robin T. White
Dept. Chair	IA Dept. of Ed.	Research Coordinators	

APPENDIX N. THANK-YOU CORRESPONDENCE

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 Mackay Hall
Ames, Iowa 50011-1120
PH 515 294-6444
FX 515 294-4493
EM fcseds@iastate.edu

May 22, 1996

«Title» «FirstName» «LastName»
«Company»
«Address1»
«City», «State» «PostalCode»

Dear «Title» «LastName»,

On behalf of the American Association of Family and Consumer Sciences, the Iowa Department of Education, and our Department, please accept our sincere thanks for your involvement in our family and consumer sciences education research. The participation of you and your students contributed to its success.

Your involvement demonstrates your commitment to documenting the effectiveness of family and consumer sciences education in secondary schools. It is important to gather information that can help decision makers support family and consumer sciences education. We know education in all aspects of family life strengthens the future lives of teens. You are helping to provide the hard evidence to support that professional mission. We are beginning to analyze the data and results will be shared throughout the state and at national meetings next year.

We know your participation took special effort during the busiest time of the school year. Thank you for making this research one of your priorities. The enclosed ruler is a very small token of our appreciation for your help in "measuring" program effectiveness.

Sincerely,

Judy K. Brun, Ph.D., C.F.C.S.
Professor and Chair

Mary Ann Good, M.S., C.F.C.S.
Research Coordinator

Robin T. White, M.S., C.F.C.S.
Research Coordinator

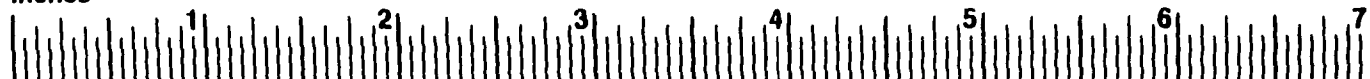
APPENDIX O. THANK-YOU RULER

Thanks!

IOWA STATE UNIVERSITY
College of Family & Consumer Sciences
Department of Family & Consumer Sciences
Education and Studies



Inches



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